

State Route 180 Braided Ramps Project

State Route 180 between State Routes 41 and 168 in the City of Fresno

06-FRE-180-PM-R58.4/R60.4

06-0C1100

06-0000093400

SCH# 2010051092

Initial Study with Mitigated Negative Declaration



Prepared by the
State of California Department of Transportation

August 2010



General Information About This Document

What's in this document?

This document contains a Mitigated Negative Declaration, which examines the environmental effects of a project on State Route 180 between State Routes 41 and 168 in the city of Fresno.

The Initial Study and proposed Negative Declaration were circulated to the public from June 2, 2010 to July 1, 2010. Comment letters were received on the draft document. Responses to the circulated document are shown in the Comments and Responses section (Appendix E) of this document, which has been added since the draft. Elsewhere throughout this document, a line in the margin indicates where changes have been made since the draft document circulation.

What happens after this?

The project has completed environmental compliance after the circulation of this document. When funding is approved, the California Department of Transportation can design and build all or part of the project.

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SCH# 2010051092
06-FRE-180-R58.4/R60.4
06-0C1100
06-000009340

Improve traffic operations on State Route 180 between State Routes 41 and 168 in the
City of Fresno (PM R58.4/R60.4) by constructing new braided branch connections

**INITIAL STUDY
with Mitigated Negative Declaration**

Submitted Pursuant to: (State) Division 13, California Public Resources Code
THE STATE OF CALIFORNIA
Department of Transportation

8/24/10
Date of Approval


Jennifer H. Taylor, Acting Division Chief
Central Region Environmental Division
California Department of Transportation



Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans), as CEQA lead Agency, proposes to build new braided ramps on State Route 180 between State Routes 41 and 168 in the City of Fresno (PM R58.4/R60.4). The project will construct new braided branch connections between State Routes 41, 180, and 168 to improve traffic operations, reduce congestion, and enhance traffic safety within freeway-to-freeway interchanges. Along the new branch connections, two new separate structures will be constructed and the existing First Street undercrossing will be widened. Also, the Cedar Avenue on-ramp to westbound State Route 180 will be widened to two lanes in order to accommodate a ramp-metering system. Ramp-metering will also be installed on westbound State Route 180 to the southbound State Route 41 branch connection. The existing drainage system within the project limits will be modified. All work is within the existing state right-of-way.

Determination


Caltrans has prepared an Initial Study for this project and, following public review, has determined from this study that the project will not have a significant effect on the environment for the following reasons.

The project will have no effect on: land use, growth, farmlands, community impacts, emergency services, utilities, hydrology and floodplain, water quality, geology/soils/seismic/topography, cultural resources, paleontology, hazardous waste or materials, natural communities, wetlands and other waters, plant species, animal species, threatened or endangered species, or invasive species.

The project will have no significant effect on air quality, traffic and transportation/bicycle and pedestrian facilities, and visual/aesthetics issues.

In addition, the project will have no significantly adverse effect on noise because the following mitigation measures will reduce potential effects to insignificance:

- Noise abatement was found to be reasonable and feasible at four locations. Four soundwalls will be built (one on the northern side of State Route 180 and three on the southern side of State Route 180) in order to lower noise levels.


Jennifer H. Taylor, Acting Division Chief
Central Region Environmental Division
California Department of Transportation


Date of Approval



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List of Abbreviated Terms

Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
FHWA	Federal Highway Administration
NEPA	National Environmental Policy Act

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans), as CEQA lead Agency, proposes to improve traffic operations on State Route 180 between State Routes 41 and 168 in the City of Fresno (post miles R58.4–R60.4). State Route 180 is an east-west highway that reaches across the San Joaquin Valley and into the Sierra Nevada. In the project area, it is an urban six-lane divided freeway between State Routes 41 and 168 (see Project Vicinity Map, Figure 1-1 and Project Location Map, Figure 1-2). Currently, the project area serves as a confluence of these three urban freeways, with traffic attempting to transfer from one freeway to another, while other traffic attempts to maintain highway speeds as it continues through the area. Southbound traffic attempting to enter eastbound State Route 180 from State Route 41 competes with eastbound traffic attempting to exit State Route 180 for State Route 168. Traffic westbound on 180 mixes with traffic leaving State Route 168 only a short distance before the interchange with State Route 41, leading to peak hour congestion as motorists attempt to find and maintain a position in a lane that leads to their destination.

The project will construct new braided ramps between State Routes 41, 180, and 168 that would separate these competing traffic streams, thereby improving traffic operations, reducing congestion, and enhancing traffic safety (see Figure 1-3). As part of the new branch connections, two new separate structures will be constructed and the existing First Street undercrossing will be widened. The Cedar Avenue on-ramp to westbound State Route 180 will be widened to two lanes to accommodate a ramp-metering system; such a system would also be used on the connection from westbound State Route 180 to southbound State Route 41. The existing drainage system within the project limits will be modified. All work will be within the existing State right-of-way.

Locally, State Routes 180, 41 and 168 serve commuter and recreational traffic between the cities of Clovis and Fresno, as well as the rural cities of Fowler, Selma, Sanger, and Madera, and the surrounding rural areas.

Regionally, State Routes 180 and 41 also serve commuter, recreational and commercial truck traffic between the coastal and mountain recreational areas. In

addition, State Route 168 serves as a major route between the cities of Fresno and Clovis to the mountain recreational areas of Shaver and Huntington lakes and the surrounding foothill communities.

An Environmental Impact Report/Environmental Impact Statement was approved on May 20, 1977 for State Route 180 between State Route 99 and Chestnut Avenue. On October 25, 1989, an Environmental Reevaluation for State Route 180 between State Route 41 and Chestnut Avenue was approved for a six-lane freeway on an eight-lane right-of-way. This included a concept for a future braided ramps system in the ultimate right-of-way requirements. This allowed the state to acquire all the necessary right-of-way for a future braided ramps system.

This project was given approval by the California Transportation Commission to be included in a statewide demonstration program to use the design-build process. The Braided Ramps Project is the second project statewide to use design-build. This process allows the state to advertise a project prior to the design being completed. A design-build firm will bid on the project and complete the remaining design and construction. With Caltrans' approval, the design-build firm could start construction on the project before the design is completed.

Because funding for the project includes federal funds, Caltrans, the NEPA Lead Agency, will prepare a Categorical Exclusion.

The project was programmed in the 2010 State Highway Operation and Protection Program (SHOPP) cycle and is included in the Measure C local sales tax program administered by the Fresno County Transportation Authority. The project is also included in the Council of Fresno County Government's 2007 Regional Transportation Plan.

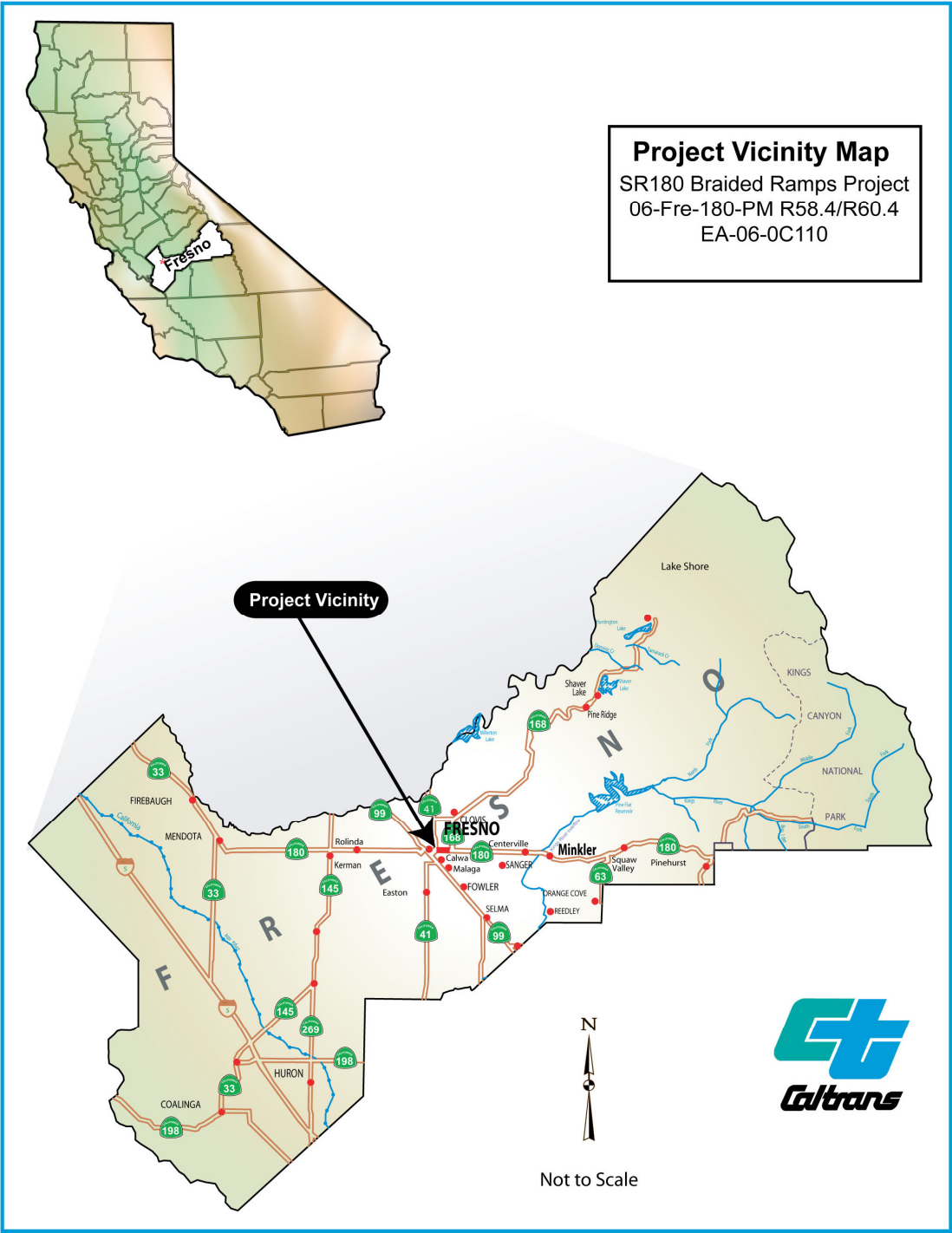


Figure 1-1 Project Vicinity Map



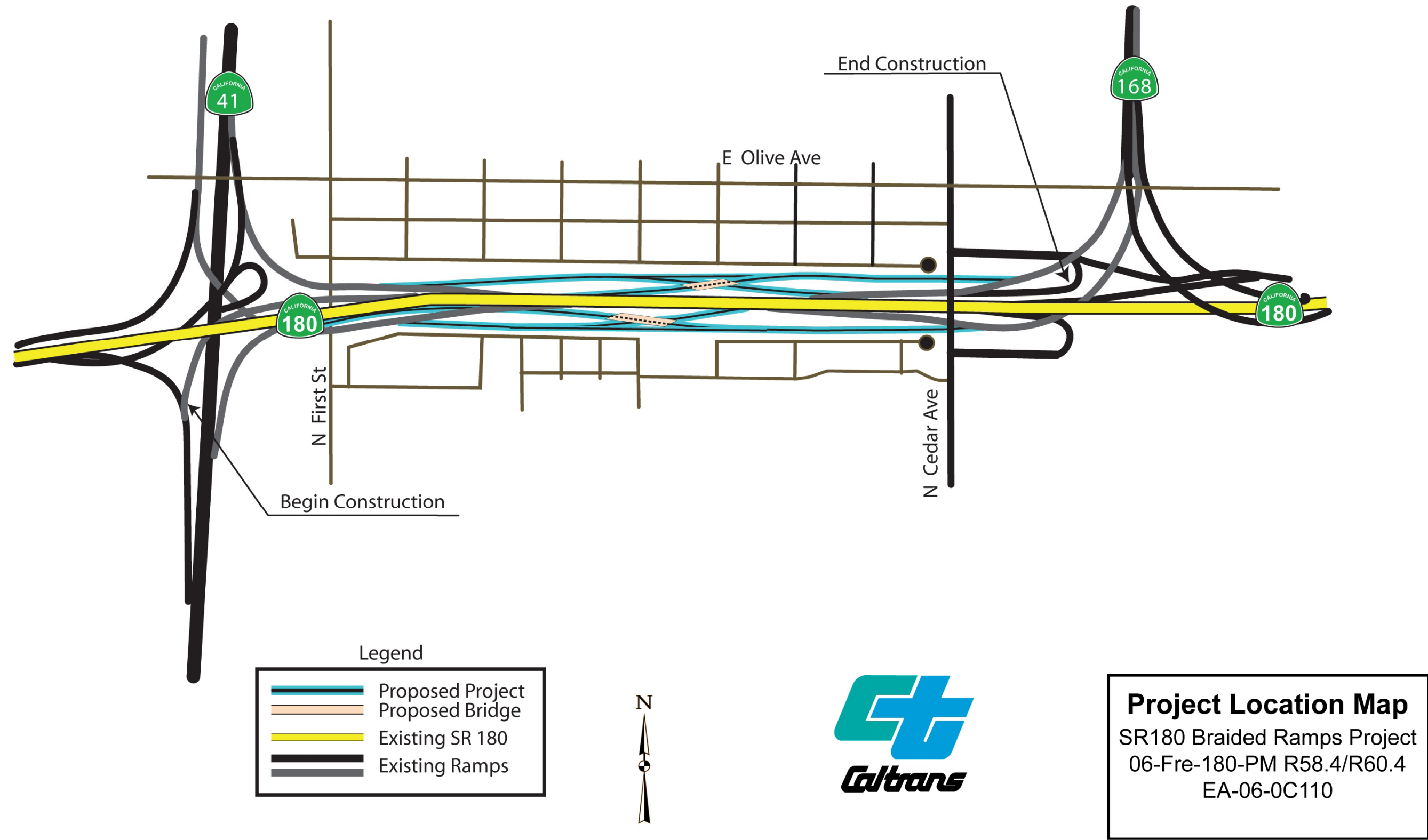


Figure 1-2 Project Location Map

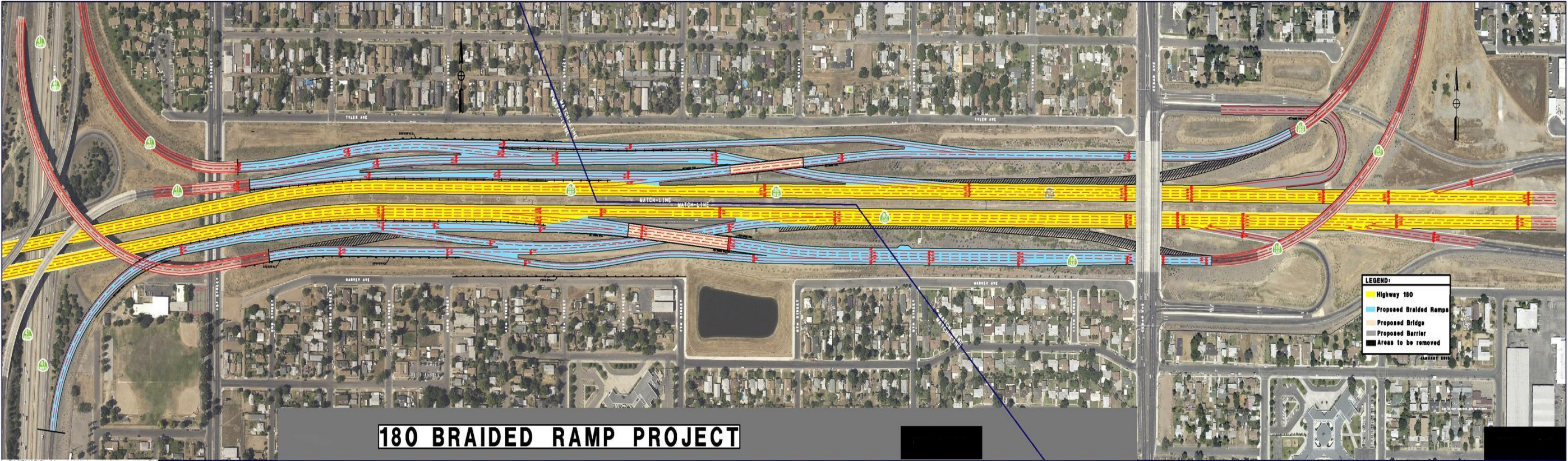


Figure 1-3 Braided Ramps

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to:

- Improve traffic operations and reduce congestion on State Route 180 between State Routes 41 and 168.
- Enhance traffic safety within freeway-to-freeway interchanges on State Route 180 between State Routes 41 and 168.

1.2.2 Need

Traffic congestion and higher-than-average accident rates on this segment of State Route 180 between State Routes 41 and 168 constitute the need for this project.

1.2.2.1 Congestion and Traffic Operations

Traffic on this stretch of freeway is substantially congested during much of the day. The traffic merging between and among the three freeways is heavy and the options for motorists numerous and the space available for them to complete their weaving is limited.

Level of service is an indicator of operating condition on a roadway and is defined in categories ranging from “A” to “F” (see Figure 1-3). A level of service of “A” indicates free-flowing traffic with no hindrance to driving speed caused by traffic conditions; whereas, level of service “F” indicates substantial congestion with slow-moving, stop-and-go traffic.

A Traffic Operation Analysis was prepared in April 2009, and additional traffic data was provided in July 2010. The traffic analysis was performed for the existing conditions (2007), as well as for the construction year (2015) and the design year (2035) conditions with and without the project.

The current annual average daily traffic count for this portion of State Route 180 is estimated at 158,000 vehicles. Without improvement, by the construction year 2015 and the design year 2035, this segment of State Route 180 is expected to deteriorate to level of service “F” (see Tables 1.1, 1.2, 1.3, and 1.4). The average daily traffic count is estimated to be 184,400 vehicles by 2015 and 255,200 vehicles by 2035.

**Table 1.1 Traffic Levels, Eastbound State Route 180 – 2015 No-Build
Peak Hour Level of Service**

Location	Peak Hour Level of Service
Mainline before northbound 41 on-ramp	C
Mainline weaving section after northbound 41 on-ramp	E
Mainline between on-ramps for northbound and southbound 41	D
Weaving section between southbound 41 on-ramp and eastbound 168 off-ramp	F
Mainline after Cedar Avenue off-ramp	D

Source: Department of Transportation Traffic Study, 2009

**Table 1.2 Traffic Levels, Westbound State Route 180 – 2015 No-Build
Peak Hour Level of Service**

Location	Peak Hour Level of Service
Mainline before westbound 168 on-ramp	D
Mainline weaving section between westbound 168 on-ramp and the northbound 41 connector ramp	F
Mainline weaving section between northbound 41 connector ramp and southbound 41 connector ramp	F
Mainline after southbound 41 off-ramp	C

Source: Department of Transportation Traffic Study, 2009

**Table 1.3 Traffic Levels, Eastbound State Route 180 – 2035 No-Build
Peak Hour Level of Service**

Location	Peak Hour Level of Service
Mainline before northbound 41 on-ramp	D
Mainline weaving section after northbound 41 on-ramp	F
Mainline between on-ramps for northbound and southbound 41	F
Weaving section between southbound 41 on-ramp and eastbound 168 off-ramp	F
Mainline after Cedar Avenue off-ramp	F

Source: Department of Transportation Traffic Study, 2009

**Table 1.4 Traffic Levels, Westbound State Route 180 – 2035 No-Build
Peak Hour Level of Service**

Location	Peak Hour Level of Service
Mainline before westbound 168 on-ramp	F
Mainline weaving section between westbound 168 on-ramp and northbound 41 connector ramp	F
Mainline weaving section between northbound 41 connector ramp and southbound 41 connector ramp	F
Mainline after southbound 41 off-ramp	D

Source: Department of Transportation Traffic Study, 2009

1.2.2.2 Safety

The accident history within the project limits for the most recent three-year study period (July 2006-June 2009) reported that the actual total accident rates on both directions of State Route 180 were higher than the statewide average for a highway of similar design. There were 118 accidents in the eastbound direction and 121 accidents in the westbound direction. Most of these accidents were traffic weaving-related collisions and rear-end collisions. Rear-end collisions are the second most common type of accident and occur when a fast-approaching vehicle comes upon a vehicle that has slowed down or stopped in the road ahead. With no time to stop and no place to run off the road or pass, the approaching vehicle hits the slower vehicle.

Table 1.5 provides the accident rates for the segment of State Route 180 between State Routes 41 and 168.

**Table 1.5 Accident Rates for State Route 180 between State Routes 41
and 168 from July 1, 2006 to June 30, 2009**

Direction	Actual			State Average		
	Fatal	Fatal & Injury	Total	Fatal	Fatal & Injury	Total
Eastbound 180	0.000	0.34	0.96	0.009	0.28	0.88
Westbound 180	0.000	0.24	0.98	0.009	0.28	0.88

Source: Department of Transportation Office of Traffic Engineering

* Accident Rate (per million vehicle miles)







<h1>LEVELS OF SERVICE</h1> <p>for Freeways</p>			
Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		70	Highest quality of service. Traffic flows freely with little or no restrictions on speed or maneuverability. No delays
B		70	Traffic is stable and flows freely. The ability to maneuver in traffic is only slightly restricted. No delays
C		67	Few restrictions on speed. Freedom to maneuver is restricted. Drivers must be more careful making lane changes. Minimal delays
D		62	Speeds decline slightly and density increases. Freedom to maneuver is noticeably limited. Minimal delays
E		53	Vehicles are closely spaced, with little room to maneuver. Driver comfort is poor. Significant delays
F		<53	Very congested traffic with traffic jams, especially in areas where vehicles have to merge. Considerable delays

Figure 1-4 Levels of Service

1.3 Alternatives

A Build Alternative and the No-Build Alternative are under consideration.

1.3.1 Build Alternative

The Build Alternative would construct new braided branch connections on the north and south sides of State Route 180. All work would be done within the existing state right-of-way. The work would include the following:

Southern Side Braided Ramps

- Build a bridge supporting new ramps to separate existing heavy traffic movements (1) from eastbound State Route 180 to eastbound State Route 168 and (2) from north and southbound State Route 41 to eastbound State Route 180.
- Slightly realign the northbound State Route 41 to eastbound State Route 180 ramp and install a concrete barrier between eastbound State Route 180 and the branch connections.
- Widen the existing First Street bridge to the southern side by about 17 feet.
- Build three soundwalls on the southern side of State Route 180.
- Remove two existing overhead sign structures and build approximately seven new overhead sign structures.

Northern Side Braided Ramps

- Build a new bridge supporting new ramps to separate existing heavy traffic movements (1) from westbound State Route 168 and 41, and (2) from westbound State Route 180 to 41.
- Construct a soundwall along the northern side of State Route 180.
- Widen the Cedar Avenue on-ramp to westbound State Route 180 and install ramp-metering.
- Construct a ramp-metering system on westbound State Route 180 to the southbound State Route 41 branch connection.
- Remove two existing overhead sign structures and build approximately thirteen new overhead sign structures.

The Build Alternative is estimated to cost \$49 million.

Transportation System Management and Transportation Demand Management Alternatives

Transportation system management strategies are actions that increase the efficiency of existing facilities, typically increasing the number of vehicle trips a facility can carry without increasing the number of through lanes. Examples of transportation system management strategies include: ramp metering, auxiliary lanes, turning lanes, reversible lanes, and traffic signal coordination. Transportation system management also encourages automobile, public and private transit, ridesharing programs, and bicycle and pedestrian improvements as elements of a uniform urban transportation system. The best of these integrate multiple forms of transportation, such as pedestrian, bicycle, auto, rail, and transit within the transportation infrastructure.

Transportation demand management focuses on regional strategies for reducing the number of vehicle trips and vehicle miles traveled as well as increasing vehicle occupancy. It encourages more passengers per vehicle or reduces traffic congestion by expanding the traveler's transportation choices in terms of travel methods. A common part of transportation demand management is providing contract funds to regional agencies that are actively promoting ridesharing, maintaining rideshare databases, and providing limited rideshare service to employers and individuals.

Although transportation system management measures alone could not satisfy the purpose and need of the project, the following measure has been incorporated into the Build Alternative for this project: ramp metering.

1.3.2 No-Build Alternative

The No-Build Alternative would keep this segment of State Route 180 in its current condition. The No-Build Alternative does not meet the purpose and need for the project because traffic congestion would not improve and traffic operations would become worse due to increased weaving movements within the freeway system. Rear-end and traffic weaving-related collisions would not be reduced. The project would also not conform to the minimum acceptable level of service (level of service "D").

1.3.3 Comparison of Alternatives

After the public circulation period, all comments were considered, and Caltrans selected a preferred alternative and made the final determination of the project's effect on the environment. In accordance with the California Environmental Quality

Act, no unmitigable significant adverse impacts were identified, and Caltrans prepared a Mitigated Negative Declaration.

In evaluating the project alternatives, Caltrans' criteria included the project purpose and need objectives, potential environmental factors, congestion relief, and improved safety and traffic operations (see Table 1.6).

Table 1.6 Comparison of Alternatives

Evaluation Criteria	Build Alternative	No-Build Alternative
Reduces Congestion	Level of service would be "D" or better for the 20-year design period.	Provides no reduction in congestion
Improves Traffic Operations and Enhances Safety	The braided ramps system would reduce congestion and improve traffic operation, thereby improving safety by eliminating the heavy traffic merging that currently occurs within short weaving distance.	Provides no improvement to traffic operations or safety
Minimizes Environmental Impacts	Soundwalls would be constructed to minimize noise impacts.	No effect on the environment
Meets Purpose and Need	Yes	No

The Build Alternative would construct new braided branch connections on the north and south sides of State Route 180. The cost of the Build Alternative is \$49 million.

The No-Build Alternative would not meet the purpose and need of the project, as traffic congestion would not improve and traffic operations would worsen due to increased weaving movements within the freeway system.

1.3.4 Identification of a Preferred Alternative

Caltrans has identified the Build Alternative as the preferred alternative because it has the greatest project benefits with regard to any associated impacts. The Build Alternative will reduce congestion, improve traffic operations, and enhance traffic safety.

1.3.5 Alternatives Considered but Eliminated from Further Discussion

The ultimate design alternative was the original approved configuration of the State Route 180 project when the segment from Fresno Street to Chestnut Avenue was

developed. The project's first phase was constructed in 1997. The ultimate design configuration required constructing two new structures: one structure on the north side and one structure on the south side of State Route 180. The ultimate design alternative would not have allowed drivers to make the "U" movements required to go from westbound State Route 168 to northbound State Route 41 and from southbound State Route 41 to eastbound State Route 168. In the current configuration, motorists can accomplish these movements. This alternative was eliminated, as it does not meet the purpose and need of the project because it limits the options available to motorists.

1.4 Permits and Approvals Needed

No permits are required for this project.

Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter explains the impacts that the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project, potential impacts from each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow. Related regulatory information—the laws, regulations, and governmental and regulatory agencies involved for each impact area—is provided in Appendix D.

As part of the scoping and environmental analysis conducted for the project, the following environmental issues were considered, but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document.

- Land Use - The project is consistent with Existing and Future Land Use and with State, Regional, and Local Plans: Measure C Plans, the 2025 City of Fresno General Plan, the 2007 Fresno County Regional Transportation Plan, the 2000 Fresno County General Plan, and the 2010 State Transportation Improvement Program.
- Wild and Scenic Rivers - No rivers classified as Wild and Scenic were identified in the project area (Field Visit, February 1, 2010).
- Parks and Recreation - No parks or recreation facilities were identified in the project limits (Field Visit, February 1, 2010).
- Growth - The project would not promote growth because it is an operational improvement project on an existing freeway located within an urban area that has an established growth pattern (Project Study Report, June 1, 2009).
- Farmlands/Timberlands - The project is in an urban area, and there is no farmland or timberland in the project area (Field Visit, February 1, 2010).

- **Community Impacts** - The project would not disrupt the community character or cohesion or result in any relocation of businesses or residences because it is an operational improvement project on an existing freeway and contained within the state right-of-way (Field Visit, February 1, 2010). In addition, no minority or low-income populations have been identified that would be adversely affected by the project as determined above. Therefore, this project is not subject to the provisions of Executive Order 12898.
- **Cultural Resources** - No impacts to cultural resources are anticipated due to the amount of ground disturbance from the original State Route 180 project. (Archeological Survey Report Memo with attached Historic Property Survey Report, April 30, 2010).
- **Water Quality and Storm Water Runoff** - With the incorporation of best management practices and proper and accepted engineering practices, the project would not have adverse effects on surface or groundwater runoff (Water Quality Report, March 17, 2010).
- **Geology/Soils/Seismic/Topography** - There are no known faults that exist in the project area. The project would not result in substantial soil erosion or landslides. The project is not located on a geologic unit or soil that is unstable or that will become unstable as a result of the project. (U.S. Geological Survey Earthquake Hazards Program, Preliminary Soils Investigation for Structures for State Route 180, August 6, 2010).
- **Paleontology** - It is unlikely that significant paleontological resources would be encountered because excavation would be shallow and in areas previously disturbed by residential development. (Paleontological Identification Report, February 18, 2010).
- **Hazardous Waste or Materials** - The project has very little risk of encountering hazardous waste (Hazardous Waste Memo, February 10, 2009).
- **Natural Communities** - No natural communities were identified in the project area. Non-native vegetation and trees that would be removed would be surveyed for active nests before construction (Biological Compliance Memo, February 13, 2009).
- **Wetlands and other Waters** - No wetlands or other waters were identified in the project area (Biological Compliance Memo, February 13, 2009).

- Plant Species - No special-status plant species were identified in the project area (Biological Compliance Memo, February 13, 2009).
- Animal Species - No special-status species or habitat were found in the project area (Biological Compliance Memo, February 13, 2009).
- Threatened and Endangered Species - No threatened or endangered species were found in the project area (Biological Compliance Memo, February 13, 2009).
- Invasive Species - Precautions to prevent the spread of invasive species would occur during construction with the use of best management practices (Biological Compliance Memo, February 13, 2009).

2.1 Human Environment

2.1.1 Utilities and Emergency Services

Affected Environment

This section of State Route 180 is an urban six-lane divided freeway between State Routes 41 and 168 within the city limits of Fresno. All utilities are located outside of the current state right-of-way.

The City of Fresno provides law enforcement and provides fire protection and emergency medical and rescue services. The Fresno County Sheriff's Department also uses the freeways to gain access to its rural areas of jurisdiction, as do the contracted ambulance companies providing services to the same areas. The California Highway Patrol is responsible for traffic enforcement on State Route 180.

Environmental Consequences

The project would not remove or relocate utilities. All utilities are located outside of the project area and would not be affected by construction.

The project will have a beneficial impact on fire protection, law enforcement, emergency, and other public services by providing a safer and upgraded highway when construction is complete. In addition, the project will facilitate faster fire and medical response times to emergencies in the area by providing braided ramps that will improve traffic operations in the area.

Although the project would temporarily create traffic delays, construction impacts on traffic and transportation will not be substantial because the project will enforce a Traffic Management Plan.

Avoidance, Minimization, and/or Mitigation Measures

During construction, a Traffic Management Plan will be developed to accommodate local traffic patterns and reduce delay, congestion, and accidents. Temporary lanes will be constructed in the median to shift the existing mainline lanes to provide room for the construction of the two bridges. Traffic will be reduced to a minimum of one lane in each direction during night work and two lanes in each direction during day work. Alternate ramps will be designated while the existing ramps are closed. The Traffic Management Plan would include, but is not limited to:

- Release of information through brochures and mailers, press releases, and advertisements managed by the Public Information Office
- Use of fixed and portable changeable message signs
- Incident management through COZEEP (Construction Zone Enhancement Enforcement Program) and the Transportation Management Center
- Night work and project phasing

2.1.2 Traffic and Transportation/Pedestrian and Bicycle Facilities

This section of the environmental document discusses the project's impacts on traffic and circulation, both during construction and after completion of the project. This section is also used to discuss impact on pedestrian or bicycle facilities if applicable.

Affected Environment

A Traffic Operation Analysis was prepared in April 2009, and additional traffic data was provided in July 2010. A Safety Analysis was completed in March 2009, and additional safety data was provided in July 2010.

This section of State Route 180 is an urban six-lane divided freeway between State Routes 41 and 168 in the City of Fresno. Locally, State Routes 180, 41 and 168 serve commuter and recreational traffic between the cities of Clovis and Fresno, as well as the cities of Fowler, Selma, Sanger, and Madera, and the surrounding rural areas. Pedestrians and bicycles are not allowed on this segment of State Route 180.

Environmental Consequences

The project is not a capacity-increasing project but, by adding the braided ramp configuration to this segment of State Route 180, additional traffic could move through the area more efficiently. The intent of this project is to decrease the number of vehicles using the mainline by providing ramps to carry traffic directly to State

Routes 41 and 168. The net effect of the project would be to increase the number of vehicles that can move through this segment safely and efficiently at any given time.

The current average daily traffic count for this portion of State Route 180 is estimated at 158,000 vehicles. The operational analysis indicates that this segment of State Route 180 operates at a level of service “F” during peak hours. The braided ramps system will improve traffic operation on the State Route 180 mainline and provide a level of service of “D” or better for the construction year (2015) and the design period (2035). Please see Tables 2.1 through 2.4 for construction year and design year traffic levels. The accident history within the project limits for the most recent three-year study period (July 2006-June 2009) reported that the actual total accident rates on both directions of State Route 180 are higher than the statewide average for a highway of similar design.

Table 2.1 Traffic Levels, Eastbound State Route 180 – 2015 Build Peak Hour Level of Service

Location	Peak Hour Level of Service
Mainline before eastbound 168 connector ramp	C
Mainline diverge area to eastbound 168 connector ramp	A
Mainline before the eastbound 168 connector ramp	C
Weaving section between northbound and southbound 41 on-ramp and Cedar Avenue	E
Mainline before Chestnut Avenue	C

Source: Department of Transportation Traffic Study, 2009

Table 2.2 Traffic Levels, Westbound State Route 180 – 2015 Build Peak Hour Level of Service

Location	Peak Hour Level of Service
Mainline before Cedar Avenue on-ramp	C
Mainline weaving section between Cedar Avenue and northbound/southbound 41 connector ramp	D
Mainline after westbound 168 off-ramp	C
Mainline after westbound 168 on-ramp	C

Source: Department of Transportation Traffic Study, 2009

Table 2.3 Traffic Levels, Eastbound State Route 180 – 2035 Build Peak Hour Level of Service

Location	Peak Hour Level of Service
Mainline before eastbound 168 connector ramp	D
Mainline diverge area to eastbound 168 connector ramp	B
Mainline before the eastbound 168 connector ramp	E
Weaving section between northbound and southbound 41 on-ramp and Cedar Avenue	E
Mainline before Chestnut Avenue	D

Source: Department of Transportation Traffic Study, 2009

Table 2.4 Traffic Levels, Westbound State Route 180 – 2035 Build Peak Hour Level of Service

Location	Peak Hour Level of Service
Mainline before Cedar Avenue on-ramp	E
Mainline weaving section between Cedar Avenue and northbound/southbound 41 connector ramp	E
Mainline after westbound 168 off-ramp	D
Mainline after westbound 168 on-ramp	D

Source: Department of Transportation Traffic Study, 2009

Avoidance, Minimization, and/or Mitigation Measures

Construction of a braided ramp system will alleviate congestion while maintaining the existing traffic connections and movements between State Routes 41, 180, and 168. Construction for the project will have a temporary effect on the connector ramps and mainline of this segment of State Route 180. Delay in traffic will be expected during construction, but this impact would not be substantial. Temporary lanes will be constructed in the median to shift the existing mainline lanes to provide room for the construction of the two bridges. Traffic will be reduced to a minimum of one lane in each direction during night work and two lanes in each direction during day work. Alternate ramps will be designated while the existing ramps are closed.

A Traffic Management Plan will be developed to minimize delays and maximize safety for the motorists during construction. The Traffic Management Plan would include, but is not limited to, the following:

- Release of information through brochures and mailers, press releases, and advertisements managed by the Public Information Office.
- Use of fixed and portable changeable message signs.
- Incident management through COZEPP (Construction Zone Enhancement Enforcement Program) and the Transportation Management Center.
- Night work and project phasing.

2.1.3 Visual/Aesthetics

Affected Environment

A Caltrans landscape architect completed a Visual Impact Assessment for the project on April 29, 2010. An updated version was sent out August 2010. The focus of the visual assessment is to determine the project's impacts on views to and from State Route 180 as well as other potentially critical locations. The existing landscape of the project is viewed from both sides of the freeway and an inventory of on-site visual resources is developed. These visual resources are evaluated and rated for their aesthetic benefit and for their contribution to the existing character of the landscape and region. The existing visual resource inventory is then compared with the project features, and any potential conflicts of impacts to the existing visual resources are defined.

The project area is generally defined as an urban/residential area. This segment of State Route 180 is elevated at the west end and depressed at the east end. During the winter months, the view to the distant east is often dominated by the snow-capped mountains of the Sierra Nevada, which are visible when the air is clear. The vegetation within the project area consists of landscaping associated with homes, businesses, schools, and parks. Along State Route 180, the landscaped slopes provide some contrast in terms of color and form to the engineered freeway. Agricultural lands with mature orchards and cultivated fields can be found farther east on State Route 180. Urban development is extensive within the project area. On the elevated section of State Route 180, residential homes dominate the views on both sides of the freeway. Other human-made objects include the State Routes 41/180 interchange to the west and the State Routes 168/180 interchange to the east.

Understanding the relationship between the regional landscape and the immediate visual environment is necessary to assess visual effects. To provide a framework for understanding the visual effects of the project, the regional landscape is divided into distinct landscape units. In this case, the project area includes one specific landscape unit: the urban freeway. The six-lane facility with auxiliary lanes and existing side slopes is the predominant landscape unit within the project area, which is 2 miles long. The boundaries of the landscape unit are the State Routes 41/180 interchange to the west and the State Routes 168/180 interchange to the east. The existing roadway and planting along the roadside provide a well-defined corridor. The visual contrast between the freeway and the adjacent landscape is constant throughout the project area. The vegetation is mature, yet not large in scale, and creates a visual pattern and harmony in the landscape, without any dominant elements.

Viewer response to a roadway project is affected by a number of factors, including viewer exposure, duration of the view, and viewer sensitivity. Two general viewer groups were considered for the evaluation of the viewer response: (1) those with views from the road and (2) those with views of the road.

Viewers from the road are the highway users. These viewers are almost exclusively in motor vehicles and include tourists, commuters, commercial vehicle operators and local highway users. These viewers are numerous and will be traveling through the project area at high speeds. The local highway users are the most sensitive to aesthetic issues due to their familiarity with the area. Tourists generally have a high awareness of the visual resources around them, yet they are anticipated to be less sensitive to specific changes in the environment.

The second viewer group, viewers of the road, is composed of those who can see the roadway from off-site locations. These viewers will experience the most visual changes, such as the addition of the braided ramps and the soundwalls. The new structures for the elevated ramps will make the freeway more visible to local residents. The degree of familiarity of the project area for this viewer group would make these viewers more sensitive toward change.

Observer viewpoints (viewing locations) were selected for their effectiveness in either representing the typical visual character of the project or showing unique project components or affected resources as seen by the two viewer groups. Four observer viewpoints were determined to best reveal the project's components and any potential visual character change (see Figure 2-1).

A Visual Quality Evaluation was conducted to assess the magnitude of the potential visual changes caused by the project. The Visual Quality Evaluation compared the visual quality of both the existing and the with-project conditions. For existing conditions, field reviews of the observer viewpoints were conducted and rated from 1 (low) to 7 (high) for the existing quality of the view from each viewpoint. For the with-project conditions, visual simulations showing the visual changes that may occur as a result of the project were studied and rated using the same system. The numerical difference, if any, between the existing and with-project conditions measured the change that may occur as a result of the project.

The numerical ratings are selected based on evaluative criteria using three primary components identified as vividness, intactness, and unity. These three criteria are defined by the Federal Highway Administration and described as follows:

Vividness – The visual power or memorability of the landscape components as they combine in striking and distinctive visual pattern.

Intactness – The visual integrity of the landscape and its freedom from non-typical encroaching elements. If all the various elements of a landscape seem to belong together, there will be a high level of intactness.

Unity – The visual harmony of the landscape considered as a whole. Unity represents the degree to which the visual elements maintain a coherent visual pattern.

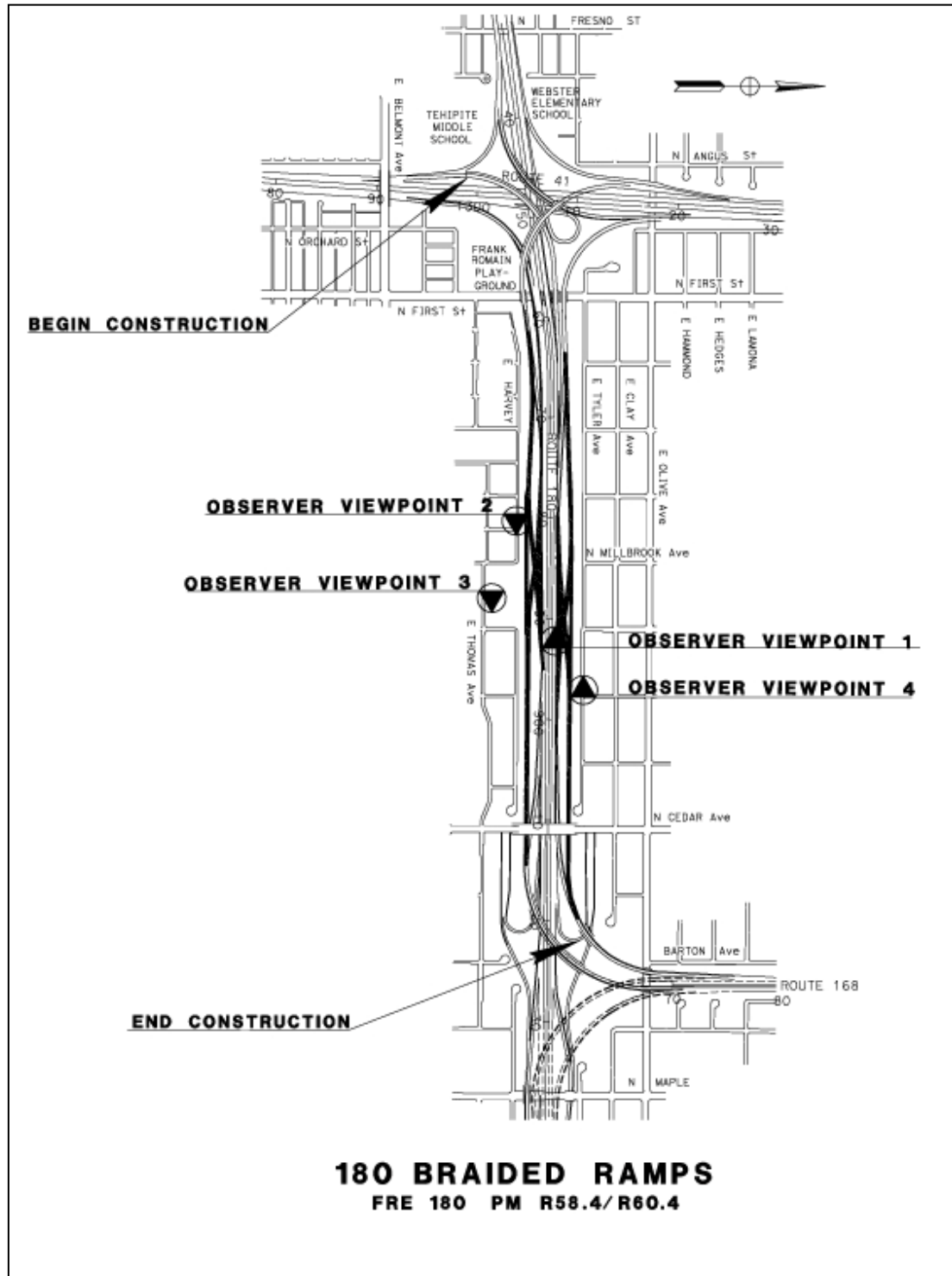


Figure 2-1 Observer Viewpoints

Environmental Consequences

The overall visual ratings for the project were determined by averaging the ratings of each observer viewpoint (see Table 2.5). The existing facility, with the rating of 3.9, is rated above average for visual quality. If constructed, the project would create a lowered visual quality rating of 3.3, slightly below average. The net visual quality difference from the existing to the project is -0.6. The reduction of vividness, intactness, and unity is primarily due to the higher visibility of the freeway, the loss of vegetation, and the addition of soundwalls. The following is a summary of the visual impacts for the project area:

- Removal of existing vegetation along the roadside to accommodate the braided ramps
- Construction of new, elevated structures
- Additional grading
- Soundwalls

Table 2.5 Visual Quality Evaluation Ratings

Viewpoint	Existing Visual Quality	Visual Quality After Project	Change in Quality
Observer Viewpoint 1	3.5	3.6	0.1
Observer Viewpoint 2	3.7	2.2	-1.5
Observer Viewpoint 3	4.7	4.4	-0.3
Observer Viewpoint 4	3.8	2.8	-1.0

Observer Viewpoint 1

Observer viewpoint 1 is on westbound State Route 180 facing west (see Figure 2-1). The existing visual quality rating for this location is 3.5. In its current condition, State Route 180 is a well-defined corridor. Grading was completed during the construction of the original freeway in anticipation of the braided ramps project. Adjacent slopes are landscaped and provide a barrier to and from the freeway. From a visual perspective, there is no dominant feature in the landscape. The mature and continuous vegetation along both sides of the freeway contribute to a unified view, which results

in moderate unity and intactness. The project will construct braided ramps along this section of State Route 180 and add two lanes to the existing right-of-way. The increase in pavement, the added ramps, and the removal of vegetation make the scale of the freeway appear much larger, causing the ratings for intactness to decrease. The vividness and the unity slightly increase, as the addition of the roadway causes the environment to look more complete and coherent. The visual quality rating after the project is 3.6, a visual quality difference of 0.1 (see Figures 2-2 and 2-3).



Figure 2-2 Existing Condition Observer Viewpoint 1



Figure 2-3 Simulated Condition Observer Viewpoint 1

Observer Viewpoint 2

Observer viewpoint 2 is near homes looking toward the elevated eastbound lanes of State Route 180 (see Figure 2-1). The existing visual quality rating for this location is 3.7. In its current condition, the graded slopes and mature landscaping add visual interest and provide a barrier between State Route 180 and the neighborhood. This also contributes to a unified view, which results in moderate unity and intactness. The project would require a soundwall at this location. The 12-foot-high wall would screen the freeway from the adjacent neighborhood. The vividness and intactness would decrease because most of the existing landscape would be removed or blocked by the proposed wall. The unity would also drop, as the transparency of the chain link fence would be interrupted by the proposed soundwall. The visual quality rating after the project is 2.2, a visual quality decline of -1.5 (see Figures 2-4 and 2-5).



Figure 2-4 Existing Condition Observer Viewpoint 2



Figure 2-5 Simulated Condition Observer Viewpoint 2

Observer Viewpoint 3

Observer viewpoint 3 is along East Thomas Avenue next to the water retention basin facing the eastbound lanes of State Route 180 (Figure 2-1). The existing visual quality is 4.7. Currently, the vividness is moderately high due to the water and its reflection of the surrounding landscape. The harmonious elements of the landscape contribute to moderately high unity and intactness. The elevated ramps of the project would be visible from this viewpoint, slightly reducing the visual quality. Unity and intactness would drop only slightly, as State Route 180 is farther away at this location, making the new structures less noticeable. The visual quality rating after the project is 4.4, a visual quality rating difference of -0.3 (see Figures 2-6 and 2-7).



Figure 2-6 Existing Condition Observer Viewpoint 3



Figure 2-7 Simulated Condition Observer Viewpoint 3

Observer Viewpoint 4

Observer viewpoint 4 is in a neighborhood facing westbound State Route 180 (see Figure 2-1). The existing visual quality rating is 3.8. In its current condition, the landscape is dominant, creating a barrier from State Route 180. The existing vegetation creates a coherent and harmonious visual quality resulting in a moderate degree of unity and intactness. The project would add ramps near street level, bringing State Route 180 closer to the neighborhood. The visual quality, unity, and intactness of this area would decrease due to the added pavement and loss of vegetation. The visual quality rating after the project is 2.8, a visual quality rating difference of -1.0 (see Figures 2-8 and 2-9).



Figure 2-8 Existing Condition Observer Viewpoint 4



Figure 2-9 Simulated Condition Observer Viewpoint 4

Although the physical change from the project is substantial, it would not affect the overall character of the area. The project would have a visual impact on the freeway user and the local community. For freeway users, the visual changes from project improvements would not be substantial. The view would be what the urban freeway user might expect to see. The physical components of the project relate to the existing character of State Route 180, where interchanges exist on either end of the project area and similar structures are already present. On westbound State Route 180, the proposed soundwall would be noticeable to the freeway user. Substantial impacts are expected for those who live in neighborhoods surrounding the project area. Individuals would experience increased exposure to the freeway due to the ramps that would be built along the existing side slopes. The soundwalls on eastbound State Route 180 would be noticeable to the freeway user. The ramps and the removal of existing vegetation could also result in a greater visual awareness of State Route 180.

Avoidance, Minimization, and/or Mitigation Measures

Visual impacts can be managed by preserving visual unity and intactness for all viewers and by minimizing the loss of intactness that will result from the new structures.

Where feasible, existing mature vegetation will be preserved or replaced. Additional highway planting is necessary and will be addressed in a separate highway planting project that would follow the braided ramps project. Per Caltrans policy, highway planting is required on existing freeways when the area is affected by major modification to the highway and where adjacent properties are developed at the time of the roadway construction contract acceptance. The warranted highway planting will help lessen visual impacts associated with the project.

Planting will be included to reduce the visual scale and soften the appearance of the new structures. In addition, architectural treatments, such as color and/or textures would be applied to vertical surfaces. These architectural treatments will correlate with other structures along State Route 180. The aesthetic treatments will be coordinated through the Caltrans Landscape Architecture unit and the Bridge Aesthetics unit throughout the various phases of the project.

The implementation of these recommendations will minimize the visual impacts and lessen the substantial changes in the overall visual quality.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

Affected Environment

The existing drainage systems for this segment of State Route 180 consist of many drainage inlets, cross pipes, two storm water trunk lines, a pump, several small Caltrans basins, and a Fresno Metropolitan Flood Control District (Flood Control District) basin on the south side of the freeway. A cooperative agreement between Caltrans and the Flood Control District allows Caltrans to drain all the area between the right-of-way project limits into the Flood Control District basin. The lateral pipes that were constructed during the original State Route 180 project will be extended or reconstructed to accommodate the new braided ramps design.

The project does not encroach on the 100-year floodplain.

Environmental Consequences

The existing Caltrans basins in this segment were built for the original State Route 180 project. These basins helped to minimize the number of drainage systems in the project area and decreased the runoff that otherwise would flow into the Flood Control District basin. The project will decrease the capacity of the Caltrans basins, forcing more runoff into the Flood Control District basin.

Avoidance, Minimization, and/or Mitigation Measures

To maintain storage capacity, two side ditches will be built to relieve the affected Caltrans basins. One side ditch would be needed on the northern side and one on the southern side near the Flood Control District basin.

2.2.2 Air Quality

Affected Environment

An Air Quality Report was prepared on April 29, 2010. The project is located in the City of Fresno, which is within the San Joaquin Valley Air Basin. The San Joaquin Valley is nearly 300 miles long, bounded by the Tehachapi Mountains in the south and the San Joaquin Delta in the north. The Sierra Nevada range forms the eastern boundary and extends to the lower coastal ranges in the west. The total land area is 23,720 square miles.

The valley is characterized by hot, dry summers and cool winters. Precipitation is directly related to latitude and elevation, with the southern portion accumulating an average of less than 6 inches of rain per year. The rainy season is typically between November and April, with the average annual rainfall ranging from 8 inches in the southern part of Fresno County to 18 inches in the north. Snow is rare on the valley floor, though the Sierra Nevada range generally has heavy accumulations during the winter. Warm temperatures, prevailing winds and the location of the county within an enclosed valley all play a role in the air quality of the area.

Fresno County is in a non-attainment area for particulate matter (PM_{2.5}) and ozone and in an attainment-maintenance area for PM₁₀.

Environmental Consequences

Regional Air Quality Conformity

The project is in the 2007 Regional Transportation Plan, which was found to conform by the Council of Fresno County Governments on 2007. The Federal Highway Administration and Federal Transit Administration adopted the air quality conformity finding in May 2007. The project is also included in the Council of Fresno County Governments' financially constrained 2007 Regional Transportation Improvement Program. The Council of Fresno County Governments' Regional Transportation Improvement Program was found to conform by the Federal Highway Administration and Federal Transit Administration in 2007. The design concept and scope of the project is consistent with the project description in the 2007 Regional Transportation Plan, the 2007 Regional Transportation Improvement Program, and the assumptions in the Council of Fresno County Governments' regional emissions analysis.

Project-Level Analysis

A project that is located in a non-attainment or maintenance area for a given pollutant requires additional air quality analysis and reduction measures in regard to the pollutant. Table 2.7 summarizes the federal and state attainment statuses of the project. This "hot-spot" analysis is most frequently done for carbon monoxide and particulate matter. Currently, there is no hot-spot procedure for ozone, which is considered a regional pollutant. Fresno County is in a non-attainment area for particulate matter (PM_{2.5}) and ozone and in an attainment-maintenance area for PM₁₀.

Particulate Matter Analysis

Qualitative particulate matter hot-spot analysis is required under the Environmental Protection Agency Transportation Conformity rule for Projects of Air Quality

Concern, as described in the Environmental Protection Agency's Final Rule of March 10, 2006. Project types listed in 40 Code of Federal Regulations 93.126 do not require any hot-spot analysis for conformity purposes. All other projects in areas subject to conformity for particulate matter (PM₁₀ or PM_{2.5}) must have documented consideration with Interagency Consultation and Public Involvement of whether or not they are Projects of Air Quality Concern. If they are Projects of Air Quality Concern, a full qualitative analysis is needed.

The project is in a federal PM_{2.5} non-attainment area and a federal attainment-maintenance PM₁₀ area, and it requires a full qualitative PM₁₀ and PM_{2.5} hot-spot analysis under 40 Code of Federal Regulations 93.123(b)(1)(i). This project is considered a Project of Air Quality Concern due to truck volume and because the Annual Average Daily Traffic (AADT) count for the design year (2035) is greater than 125,000 vehicles. Also, it is an interchange reconfiguration involving turn lanes and other operational improvements that primarily serve gasoline vehicles. The Caltrans Traffic unit provided the Annual Average Daily Traffic count for years 2007, 2015 and 2035 (see Table 2.6).

Table 2.6 Current and Future Traffic Volumes

Year	Annual Average Daily Traffic, No-Build	4% Truck Traffic, No-Build	Annual Average Daily Traffic, Build	4% Truck Traffic, Build
2007	158,000	6,320	158,000	6,320
2015	184,400	7,376	184,400	7,376
2035	255,200	10,208	157,000	6,280

Source: Department of Transportation Traffic Study, 2009

Table 2.7 Air Quality Standards and Status

Pollutant	Averaging Time	State Standard	State Attainment Status	Federal Standard	Federal Attainment Status	Health and Atmospheric Effects	Typical Sources
Ozone (O ₃) ^a	1 hour 8 hours	0.09 <u>ppm</u> 0.070 <u>ppm</u>		— ^b 0.08 <u>ppm</u>		High concentrations irritate lungs. Long-term exposure may cause lung tissue damage. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include a number of known toxic air contaminants.	Low-altitude ozone is almost entirely formed from reactive organic gases (ROG) and nitrogen oxides (NO _x) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes. Biologically produced ROG may also contribute.
Carbon Monoxide (CO)	1 hour 8 hours 8 hours (Lake Tahoe)	20 <u>ppm</u> 9.0 <u>ppm</u> ^c 6 <u>ppm</u>		35 <u>ppm</u> 9 <u>ppm</u> —		Asphyxiant. CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Respirable Particulate Matter (PM ₁₀) ^a	24 hours Annual	50 <u>µg/m³</u> 20 <u>µg/m³</u>		150 <u>µg/m³</u> —		Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM ₁₀ .	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).
Fine Particulate Matter (PM _{2.5}) ^a	24 hours Annual	— 12 <u>µg/m³</u>		35 <u>µg/m³</u> 15 <u>µg/m³</u>		Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – considered a toxic air	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO _x , sulfur oxides (SO _x), ammonia,

Pollutant	Averaging Time	State Standard	State Attainment Status	Federal Standard	Federal Attainment Status	Health and Atmospheric Effects	Typical Sources
						contaminant – is in the PM _{2.5} size range. Many aerosol and solid compounds are part of PM _{2.5} .	and ROG.
Nitrogen Dioxide (NO ₂)	1 hour Annual	0.25 <u>ppm</u> –		– 0.053 <u>ppm</u>		Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain.	Motor vehicles and other mobile sources; refineries; industrial operations.
Sulfur Dioxide (SO ₂)	1 hour 3 hours 24 hours Annual	0.25 <u>ppm</u> – 0.04 <u>ppm</u> –		– 0.5 <u>ppm</u> 0.14 <u>ppm</u> 0.030 <u>ppm</u>		Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing.
Lead (Pb) ^d	Monthly Quarterly	1.5 <u>µg/m</u> ³ –		– 1.5 <u>µg/m</u> ³		Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also considered a toxic air contaminant.	Primary: lead-based industrial process like battery production and smelters. Past: lead paint, leaded gasoline. Moderate to high levels of aerally deposited lead from gasoline may still be present in soils along major roads, and can be a problem if large amounts of soil are disturbed.

Sources: California Air Resources Board Ambient Air Quality Standards chart, May 17, 2006 (<http://www.arb.ca.gov/aqs/aaqs2.pdf>). Sonoma-Marín Area Rail Transit Draft Air Pollutant Standards and Effects table, November 2005, page 3-52. U.S. Environmental Protection Agency and California Air Resources Board air toxics websites, May 17, 2006

Notes: ppm = parts per million; µg/m³ = micrograms per cubic meter

^a Annual PM₁₀ National Ambient Air Quality Standard revoked October 2006; was 50 µg/m³. 24-hr. PM_{2.5} National Ambient Air Quality Standard tightened October 2006; was 65 µg/m³.

^b December 22, 2006 Federal court decision may affect applicability of Federal 1-hour ozone standard. Prior to June 2005, the 1-hour standard was 0.12 ppm. Case is still in litigation.

^c Rounding to an integer value is not allowed for the State 8-hour CO standard. A violation occurs at or above 9.05 ppm.

^d The Air Resources Board has identified lead, vinyl chloride, and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM₁₀ and, in larger proportion, PM_{2.5}. Both the Air Resources Board and U.S. Environmental Protection Agency have identified various organic compounds that are precursors to ozone and PM_{2.5} as toxic air contaminants. There is no threshold level of exposure for adverse health effect determined for toxic air contaminants, and control measures may apply at ambient concentrations below any criteria levels specified for these pollutants or the general categories of pollutants to which they belong.

The project is in a non-attainment area for PM_{2.5}. The closest monitor station is in Clovis on North Villa Avenue. It registered 28 violations of the federal standard in 2006, 51.5 violations of the federal standard in 2007, and 42.5 violations of the federal standard in 2008.

The project is in an attainment-maintenance area for PM₁₀. The monitor station in Clovis on North Villa Avenue has not registered any violation of the federal standard in the last three years (2006-2008).

Particulate Matter Conclusions

A hot-spot analysis was conducted and submitted in April 2010 for Interagency Consultation as a Project of Air Quality Concern. The Environmental Protection Agency concurred with this assessment on May 10, 2010. The preliminary results indicate the project would not result in any violation of federal standards.

To determine whether the project would contribute to local PM_{2.5} hot-spot accumulations, project emissions were derived from the Emissions Factor Model (EMFAC). Tables 2.8 and 2.9 show that the emissions for the Build Alternative are less than the emissions for the No-Build Alternative. Also, the emissions for the design year of 2035 are less than the emissions for the open-to-traffic year (2015).

Table 2.8 Estimated PM_{2.5} Tons Per Year

Vehicle Emissions	PM _{2.5} No-Build Alternative			PM _{2.5} Build Alternative		
	2007	2015	2035	2007	2015	2035
Tons per year	0.4399	0.3206	0.3692	N/A	0.3062	0.2458

Source: Department of Transportation Environmental Engineering Branch

Tables 2.8 and 2.9 also show that the emissions for the Build Alternative are less than emissions for the No-Build Alternative.

Table 2.9 Estimated PM₁₀ Tons Per Year

Vehicle Emissions	PM ₁₀ No-Build Alternative			PM ₁₀ Build Alternative		
	2007	2015	2035	2007	2015	2035
Tons per year	0.478	0.3455	0.4025	N/A	0.3354	0.2655

Source: Department of Transportation Environmental Engineering Branch

The project will be open to traffic in 2015. The comparison between the Build Alternative and the No-Build Alternative indicates that the Build Alternative would improve State Route 180 level of service within the project area by decreasing congestion, accident potential, and idling time for diesel trucks, all while maintaining air quality. The improved level of service is expected to cause less congestion, which would result in less particulate matter emissions because vehicles will spend less time idling in stop-and-go traffic. Therefore, future new or worsened PM_{2.5} and PM₁₀ violations are not anticipated. The project is considered a conforming project under the PM₁₀ and PM_{2.5} conformity hot-spot regulations.

Ozone Analysis and Conclusion

The project area is in a non-attainment area for the federal and state 8-hour ozone levels. Ozone is considered a regional pollutant. Because there are no approved guidelines for ozone, a project is considered as conforming to the State Implementation Plan for ozone when the project is listed in an approved Regional Transportation Plan and associated conformity analysis. The project is listed in the 2007 Regional Transportation Plan.

Carbon Monoxide (CO) Analysis

The project is in Fresno County, which is in attainment/maintenance for the federal carbon monoxide standards. According to the California Almanac of Emissions and Air Quality (2008 edition), California has reduced carbon monoxide concentrations over the past 10 years. It is expected that improved motor vehicle emissions controls and less-polluting fuels would continue this downward trend.

The University of California at Davis Transportation Project-Level Carbon Monoxide Protocol, dated December 1997, was used to evaluate the potential carbon monoxide impact of this project (see Table 2.10).

Table 2.10 Summary of Project Mobile Source Air Toxics in Tons per Year

Protocol Question	Answer
Does the project significantly increase the percentage of vehicles operating in cold start mode?	No
Does the project improve traffic flow?	Yes, levels of service would improve
Does the project move traffic closer to receptors?	Yes and no
Is the project suspected of resulting in higher CO concentrations than those existing within the region at the time attainment demonstration?	No
Does the project involve a signalized intersection at level of service E or F?	No
Does the project involve a signalized intersection worsening its level of service to E or F?	No. If built, level of service would improve.
Are there any other reasons to believe the project may have adverse air quality impacts?	No.

Carbon Monoxide (CO) Conclusions

The project would not have an adverse effect on carbon monoxide levels. Historical air quality data shows that the existing carbon monoxide levels for the project area do not exceed either the state or federal Ambient Air Quality standards.

Mobile Source Air Toxics Analysis

The Environmental Protection Agency also regulates air toxics, in addition to the criteria air pollutants for which there are National Ambient Air Quality Standards. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (for example, airplanes), area sources (for example, dry cleaners) and stationary sources (for example, factories and refineries).

Mobile source air toxics are a subset of the 188 air toxics defined by the Clean Air Act. The mobile source air toxics are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments of 1990, whereby Congress mandated that the Environmental Protection Agency regulate 188 air toxics, also known as hazardous air pollutants. The Environmental Protection Agency assessed this expansive list in its latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in its Integrated Risk Information System (<http://www.epa.gov/ncea/iris/index.html>).

In addition, the Environmental Protection Agency identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from its 1999 National Air Toxics Assessment (<http://www.epa.gov/ttn/atw/nata1999/>). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While the Federal Highway Administration considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future Environmental Protection Agency rules.

Incomplete or Unavailable Information for Project Specific MSAT Health

Impacts. According to the Federal Highway Administration, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in mobile source air toxics emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to mobile source air toxics exposure associated with a proposed action.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Exposure Levels and Health Effects. Once emission levels and concentrations of mobile source air toxics are predicted, exposure assessment and risk analysis are

needed to determine project-specific health impacts. The Federal Highway Administration remains concerned that shortcomings in current techniques for this process preclude meaningful conclusions about project-specific health impacts. It is difficult to reliably forecast long-term concentrations of mobile source air toxics near roadways, in part because of significant variations in source strength (emissions) over time, and to determine the portion of time that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for lifetime, 70-year risk assessments, particularly because unsupportable assumptions must be made regarding travel patterns and vehicle technology over that time frame.

The assumption often made that there will be no improvements in vehicle technology and fleet emission rates from existing conditions is particularly difficult to support, given continuing vehicle emission control, fuel composition, and fleet emission improvement programs. There are also considerable uncertainties associated with the existing estimates of toxicity of the various mobile source air toxics, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, the calculated difference in health impacts between alternatives is likely to be smaller than the uncertainties associated with calculating the impacts.

The Environmental Protection Agency continues to assess the risks of various kinds of exposures to mobile source air toxics. The Environmental Protection Agency Integrated Risk Information System is a database of human health effects that may result from exposure to various substances found in the environment. The following toxicity information for the six prioritized mobile source air toxics (from the 2001 Environmental Protection Agency regulation) was taken from the Integrated Risk Information System database Weight of Evidence Characterization summaries. This information represents the Environmental Protection Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.

- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- **Diesel exhaust** is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust is the combination of diesel particulate matter and diesel exhaust organic gases. Diesel exhaust also represents chronic respiratory effects, possibly the primary non-cancer hazard from mobile source air toxics. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis.

Because analytical methodologies vary greatly between individual health studies, it is not practical to draw definitive conclusions based solely on individual studies. The Health Effects Institute has undertaken a major series of studies to research near-roadway mobile source air toxics hot-spots, the health implications of the entire mix of mobile source pollutants, and other topics. For each of the mobile source air toxics reviewed, the analysis answers three questions:

1. To what extent are motor vehicles a significant source of exposure?
2. Does it affect human health?
3. Does it affect human health at environmental concentrations?

The Health Effects Institute concluded that exposure to many mobile source air toxics came from sources other than vehicles and that mobile sources are the primary sources of exposure for only a few of the 21 mobile source air toxics listed by the Environmental Protection Agency. For many of the mobile source air toxics reviewed, Health Effects Institute concluded that there is insufficient data for an assessment of ambient exposures on human health.

Given the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health at the project level may not be reliable. While available tools do reasonably predict relative emissions changes between alternatives for larger projects, the amount of mobile source air toxics emissions from each of the project alternatives and mobile source air toxics concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have “significant adverse impacts” on the human environment.

Caltrans, under National Environmental Policy Act process delegation from the Federal Highway Administration, has provided a quantitative analysis of mobile source air toxics emissions relative to the Build Alternative and No-Build Alternative and has acknowledged that the project alternatives may result in increased exposure to mobile source air toxics emissions in certain locations. However, the pollutant concentrations and duration of exposures are uncertain, and because of this uncertainty the health effects from these emissions cannot be reliably estimated.

As discussed above, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of mobile source air toxics emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of mobile source air toxics at the project level, it is possible to qualitatively assess the levels of future mobile source air toxics emissions under the project. Although a qualitative analysis cannot identify and measure health impacts from mobile source air toxics, it can give a basis for identifying and comparing the potential differences among mobile source air toxics emissions—if any—from the various alternatives.

The qualitative assessment presented below is derived in part from a study conducted by the Federal Highway Administration entitled A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives (see Table 2.11).

Table 2.11 Summary of Project Mobile Air Source Air Toxics in Tons Per Year

Pollutant	2007	2015 Build	2015 No-Build	2025 Build	2025 No-Build	2035 Build	2035 No-Build
Diesel PM	1.6058	0.8580	0.5701	0.6655	0.5505	0.4709	0.3137
Formaldehyde	0.00617	0.00288	0.003	0.00200	0.00212	0.00143	0.00223
Butadiene	0.0042	0.0017	0.0014	0.0015	0.0012	0.0014	0.0011
Benzene	0.0243	0.0106	0.0101	0.0097	0.0099	0.0074	0.0080
Acrolein	0.0008	0.0003	0.0002	0.0003	0.0002	0.0002	0.0002
Acetaldehyde	0.0280	0.0132	0.014	0.0101	0.0110	0.0061	0.0104

Source: Department of Transportation Air Study 2010

Mobile Source Air Toxics Conclusions

This is a project with low potential mobile source air toxics effects. The Environmental Protection Agency projections indicate a continuing downward trend of the six primary mobile source air toxics. The study of mobile source air toxics, dose-response effects, and modeling tools are currently in a state where accurate information is incomplete or unavailable. This is relevant to making an accurate prediction of any reasonably foreseeable adverse effects on the human environment. There is currently no specific significance level for receptor exposure. Without a significance level for exposure, one cannot accurately and scientifically predict the effects on the human environment. Studies are currently being conducted to clarify some of these unknowns; however, the information is not available now.

Avoidance, Minimization, and/or Mitigation Measures

The project will be subject to the San Joaquin Valley Air Pollution Control District Rule 9510 (Indirect Source Review Rule). This rule applies to construction equipment emissions for transportation projects that exceed 2.0 tons of either PM₁₀ and/or nitrogen oxide air pollutants. Mitigation options include using a construction fleet that is “cleaner than the California state average” and/or in the form of fees paid to the District. The contractor will be responsible for the Indirect Source Review Air Impact Analysis and any applicable fees.

Short-Term Construction Impacts

Construction activity may generate a temporary increase in mobile source air toxics emissions. The use of diesel retrofit technologies outlined in the Congestion Mitigation and Air Quality Improvement Program provisions (technologies that are designed to lessen a number of mobile source air toxics) will help lower short-term mobile source air toxics. Compliance with the San Joaquin Valley Unified Air Pollution Control District Rules and Regulations during construction will reduce construction-related air quality impacts.

Construction mitigation includes strategies that reduce engine activity or reduce emissions per unit of operating time. Operational agreements that reduce or redirect work or shift times to avoid community exposures would have positive benefits when sites are near vulnerable populations. The use of technological adjustments to equipment, such as off-road dump trucks and bulldozers, would also be appropriate strategies. These technological fixes could include particulate matter traps, oxidation catalysts, and other devices that provide an after-treatment of exhaust emissions. The use of clean fuels, such as ultra-low sulfur diesel, also would be a very cost-beneficial strategy. The Environmental Protection Agency has listed a number of approved

diesel retrofit technologies; many of these can be deployed as emissions mitigation measures for equipment used in construction.

During construction, the project will generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants will be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses. Dust and odors at some residences very close to the right-of-way could cause occasional annoyance and complaints. The project will be subject to a Dust Control Permit from the San Joaquin Unified Air Pollution Control District. Caltrans Standard Specifications pertaining to dust control and dust palliative requirement are a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 7-1.01F “Air Pollution Control” and Section 10 “Dust Control” require the contractor to comply with the San Joaquin Valley Air Pollution Control District rules, ordinances, and regulations.

2.2.3 Noise and Vibration

Sound level, frequencies, exposure period, and changes or fluctuations in the noise levels during exposure affect sound perceived by the human ear. Sound levels are measured as decibels. Since the human ear cannot perceive all frequencies equally well, measured sound levels are often adjusted, or weighted to correspond to human hearing. This adjusted unit is known as the A-weighted decibel (dBA). All references to sound levels in this report refer to A-weighted decibels.

The A-weighted decibel unit describes a noise level at just one moment. Since very few noises are constant, other ways of describing noise over extended time periods have been developed. One way of describing fluctuating sound is to describe the fluctuating noise heard over a specific period as if it were a steady unchanging sound. For this condition, a descriptor called the equivalent sound level, $Leq(h)$ where h represents time, can be computed. Highway traffic noise impacts are evaluated by using average noise levels at sensitive receivers during the worst or noisiest one-hour period of the day.

Affected Environment

Caltrans completed a Noise Study in April 2010. The project is in Fresno County within the city limits of Fresno. This segment of State Route 180 is a six-lane mainly depressed facility, with its existing ramps and mainline nearly shielded from the surrounding residential neighborhoods by the fill from the original State Route 180 project. The land surrounding the project area is densely populated and is defined as urban/residential. The residential neighborhoods are about 100 feet from both the eastbound and westbound sections of State Route 180.

Current noise levels were measured for receptors along the project route using the Federal Highway Administration Traffic Noise Model Version 2.5 (TNM 2.5). Field measurements were recorded with a calibrated noise meter, while at the same time traffic counts were collected. The collected data was used to calibrate the Traffic Noise Model, which was then used to predict peak hour noise levels for the existing and the build and no-build design years (2035)

Caltrans identified 44 receptors that could be affected by the project. These receptors were divided into three segments (see Figures 2-10 and 2-11). The sensitive receptors at these 44 locations represent nearby residences, quadruplexes, and a church. The existing noise levels for the receptors ranged from 56 decibels (dBA) to 68 decibels (dBA). The noise abatement criterion for residences is 67 decibels (dBA).



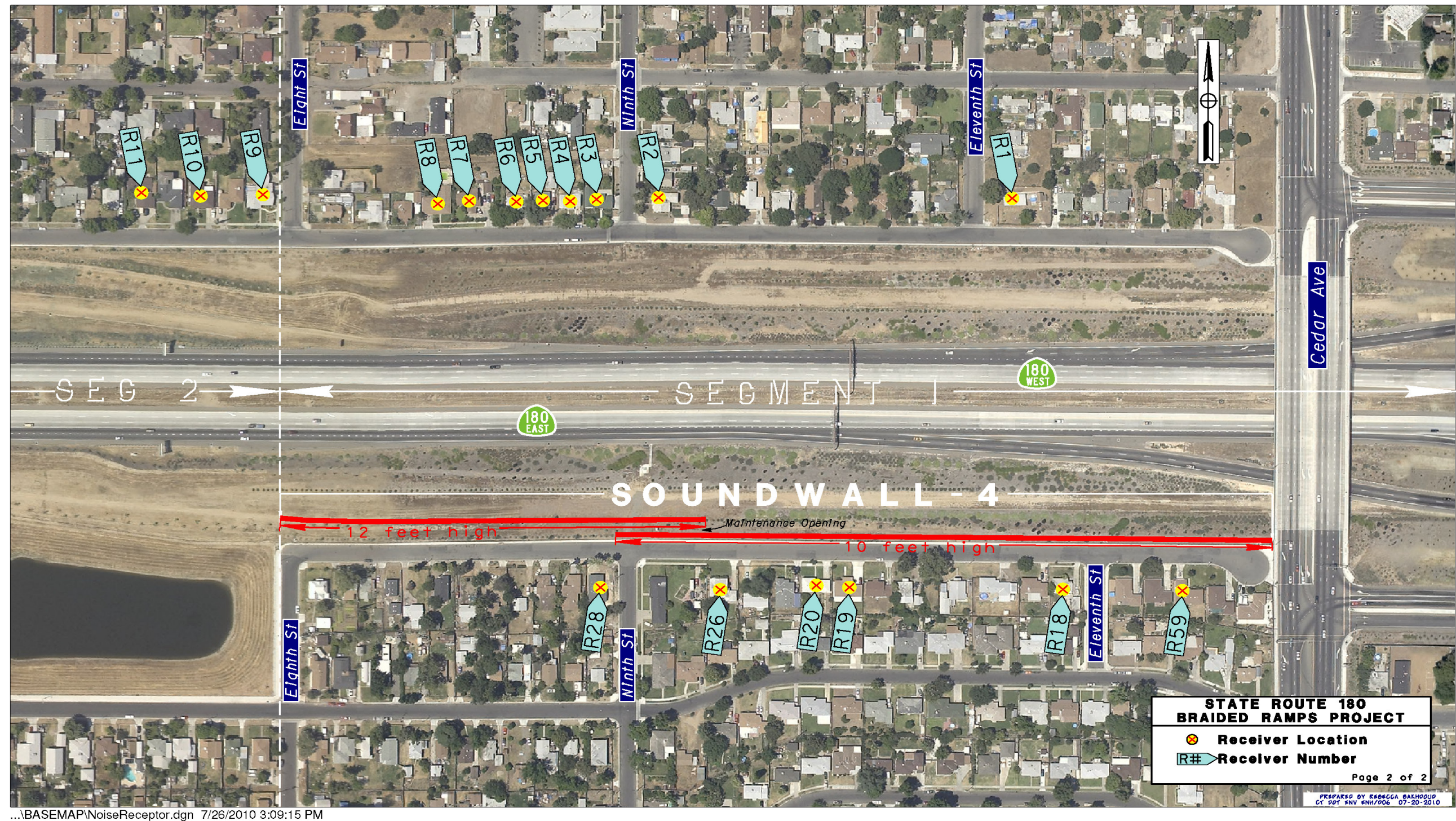


Figure 2-10 Segment 1 and 2 Receptors



Figure 2-11 Segment 2 and 3 Receptors

Environmental Consequences under the National Environmental Policy Act

Because funding for the project includes federal funds, a National Environmental Policy Act (NEPA) Categorical Exclusion will be prepared after circulation of and public comment on this document. A discussion of noise impacts under the National Environmental Policy Act must be discussed in this document. In accordance with the Caltrans *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects August 2006*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12-dBA or more increase) or when the future noise level with the project approaches or exceeds the noise abatement criterion (67 dBA). Approaching the noise abatement criterion is defined as coming within 1 dBA of the noise abatement criterion (66 dBA). Tables 2.12 through 2.14 show predictions of future noise levels for the design year (2035) with and without the project.

Table 2.12 shows the noise impact analysis for 14 receptors in Segment 1 (see Figure 2-10). Receptors are listed in the table by location from the east to the west on each side of State Route 180 from Cedar Avenue west to Eighth Street. Receptors 1 through 8 represent the residences north of State Route 180 and Receptors 18 through 20, 26, 28, and 59 represent residences south of State Route 180. The existing noise levels for these receptors range from 56 to 61 dBA. The predicted noise levels for these receptors range from 62 to 67 dBA with the project and from 57 to 63 dBA without the project.

Table 2.12 Noise Impact Analysis for Segment 1

Receptor # and Location (listed east to west on the north and then south)	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Predicted Noise Level with Abatement (dBA)			Reasonable and Feasible
				10-foot wall*	12-foot wall*	14-foot wall*	
R1—1006 N. 11 th St.	58	60	62	N/A	N/A	N/A	N/A
R2—1002 N. Ninth St.	59	60	62	N/A	N/A	N/A	N/A
R3—3893 E. Tyler	59	61	62	N/A	N/A	N/A	N/A
R4—3885 E. Tyler	60	62	62	N/A	N/A	N/A	N/A
R5—3877 E. Tyler	60	62	62	N/A	N/A	N/A	N/A
R6—3863 E. Tyler	60	62	62	N/A	N/A	N/A	N/A
R7—3851 E. Tyler	60	62	62	N/A	N/A	N/A	N/A
R8—3845 E. Tyler	61	63	63	N/A	N/A	N/A	N/A
R18—4126 E. Harvey	56	57	65	59	58	58	Yes
R19—4018 E. Harvey	57	58	66	60	59	59	Yes
R20—3958 E. Harvey	57	58	67	60	59	59	Yes
R26—3928 E. Harvey	57	58	67	60	59	59	Yes
R28—735 N. Ninth St.	59	60	66	59	59	59	Yes
R59—4166 E. Harvey	61	63	63	58	57	56	Yes

*Indicates height of proposed wall to be included in project.

Table 2.13 shows the noise impact analysis for 17 receptors in Segment 2 (see Figures 2-10 and 2-11). Receptors are listed in the table by location from the east to the west on each side of State Route 180 between Eighth Street and west to Bond Street. Receptors 9 through 14, 52 and 55 represent residences on the north side of State Route 180; Receptors 31 through 34, 36, 39, 53, 54, and 60 represent residences on the south side of State Route 180. (Receptor 58 east of Bond Street is included in Segment 3.) The existing noise levels for these receptors range from 59 to 68 dBA. The noise levels for these receptors range from 59 to 69 dBA with the project and from 61 to 69 dBA without the project.

Table 2.13 Noise Impact Analysis for Segment 2

Receptor # and Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Predicted Noise Level with Abatement (dBA)			Reasonable and Feasible
				12-foot wall*	14-foot wall*	16-foot wall*	
R9—3791 E. Tyler	59	61	60	N/A	N/A	N/A	N/A
R10—3777 E. Tyler	60	62	59	N/A	N/A	N/A	N/A
R11—3759 E. Tyler	61	62	60	N/A	N/A	N/A	N/A
R12—3607 E. Tyler	62	65	64	N/A	N/A	N/A	N/A
R52—3521 E. Tyler	63	66	65	N/A	N/A	N/A	N/A
R13—3447 E. Tyler (10 units)	64	67	66	N/A	N/A	N/A	No
R14—3441 E. Harvey	65	67	66	61	61	61	Yes
R55—3415 E. Tyler St	67	69	67	61	60	60	Yes
R31—725 N. Millbrook (Church)	64	66	69	67	66	65	No
R32—3610 E. Harvey	65	67	68	66	65	64	No
R33—737 N. 6 th St.	66	68	68	65	64	63	No
R34—3520 E. Harvey	66	68	68	66	64	63	No
R36—3480 E. Harvey (triplex)	67	69	68	65	63	62	No
R39—732 N. 4 th St.	67	69	68	64	62	61	Yes
R53—737 N. 4 th (10 units)	68	69	66	62	61	60	Yes
R54—758 N. Bond	68	69	66	62	61	60	Yes
R60—3660 E. Harvey (duplex)	67	69	66	62	61	60	Yes

*Indicates height of proposed wall to be included in project.

Table 2.14 shows the noise impact analysis for 13 receptors in Segment 3 (see Figure 2-11). Receptors are listed in the table by location from the east to the west on each side of State Route 180 between Bond Street and west to First Street. Receptors 15 through 17 and 56 through 58 represent the residences on the north of State Route 180 and Receptors 44 through 48, 50 and 51 represent residences south of State Route 180. The existing noise levels for these receptors range from 59 to 67 dBA. The noise

levels for these receptors range from 64 to 67 dBA with the project and from 61 to 69 dBA without the project.

Table 2.14 Noise Impact Analysis for Segment 3

Receptor # and Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Predicted Noise Level with Abatement (dBA)			Reasonable and Feasible
				12-foot wall*	14-foot wall*	16-foot wall*	
R58—3405 E. Tyler St.	64	67	66	61	60	60	Yes
R15—3339 E. Tyler St. (Triplex)	64	66	66	61	60	60	Yes
R16—3323 E. Tyler St. (Quadruplex)	63	65	66	61	61	60	Yes
R57—3315 E. Tyler St.	63	64	66	62	61	60	Yes
R56—3303 E. Tyler St. (Quadruplex)	67	69	67	62	61	60	Yes
R17—3293 E. Tyler – (Quadruplex)	59	63	64	N/A	N/A	N/A	N/A
R44—3304 E. Harvey	64	67	66	59	59	59	Yes
R45—759 N. 3 rd St. – (Quadruplex)	64	67	66	59	59	59	Yes
R46—747 N. 3 rd St.	64	67	66	60	59	58	Yes
R47—740 N. Fisher St. (Quadruplex)	62	66	65	60	59	59	Yes
R48—3248 E. Harvey	61	66	64	61	60	59	Yes
R50—736 N. 2 nd St.	60	62	64	N/A	N/A	N/A	N/A
R51—735 N. 2 nd St.	59	61	64	N/A	N/A	N/A	N/A

*Indicates height of proposed wall to be included in project

Segment 1 Receptors

The traffic noise modeling indicates that traffic noise levels at residences within Segment 1 are predicted to be in the range of 62 to 67 dBA for the design year (2035) with a built project. From the comments received before and during the public comment period, Caltrans identified the need to take new noise readings along East Harvey Avenue between Eighth Street and Cedar Avenue (south of State Route 180). New noise readings were taken, resulting in some receptors reaching the noise

abatement criterion. After reviewing the revised noise study, the Caltrans project development team agreed to add noise abatement for areas within this segment.

Segment 2 Receptors

The traffic noise modeling indicates that traffic noise levels at the receptor locations within Segment 2 are predicted to be in the range of 59 to 69 dBA for the design year 2035 with a built project. The results also indicate that the increase in noise is predicted to be less than substantial because the increase in noise levels is less than 12 dBA.

However, Receptors 13, 14, and 55 west of Fifth Street to the north of State Route 180 would experience an increase in noise levels approaching (66 dBA) or exceeding the noise abatement criterion (67 dBA). Also, all of the receptors south of State Route 180 within Segment 2 would experience an increase in noise levels approaching or exceeding the noise abatement criterion.

Because some of the noise levels for Segment 2 are predicted to approach or exceed the noise abatement criterion for the design year, noise abatement must be considered for areas within this segment.

Segment 3 Receptors

The traffic noise modeling indicates that traffic noise levels at the receptor locations within Segment 3 are predicted to be in the range of 64 to 67 dBA for the design year 2035 with a built project. The results also indicate that the increase in noise is predicted to be less than substantial because the increase in noise levels is less than 12 dBA.

However, receptors on Bond west to Fisher Street north of State Route 180 would experience an increase in noise levels approaching (66 dBA) or exceeding the noise abatement criterion (67 dBA). Also, Receptors 44 through 46 between Bond Street and First Street south of State Route 180 within Segment 3 would experience an increase in noise levels approaching or exceeding the noise abatement criterion.

Because some of the noise levels for Segment 3 are predicted to approach or exceed the noise abatement criterion for the design year, noise abatement must be considered for areas within this segment.

Avoidance, Minimization, and/or Noise Abatement under the National Environmental Policy Act

For purposes of the National Environmental Policy Act, soundwalls must be considered because receptors have been identified as approaching or exceeding the noise abatement criterion by the design year of 2035. Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of soundwalls (see Figures 2-10 and 2-11, which show noise receptors and soundwall locations).

Soundwall 1

Soundwall 1 would abate noise for 7 receptors on the north side of State Route 180 west of Fifth Street (see Figure 2-11). Receptors 14, 55, 57, and 58 represent single-family homes. The remaining receptors represent multi-family units: Receptor 15 is a triplex, and Receptors 16 and 56 are four-unit apartment buildings. Therefore, these identified receptors north of State Route 180 represent a total of 15 benefited residences.

Although Receptor 13 would experience a predicted noise level of 66 dBA, Soundwall 1, at any height is not capable of achieving the required minimum of 5 dBA reduction to meet the feasibility requirement of the Traffic Noise Protocol for this receptor. However, Soundwall 1 would abate the noise level for Receptor 13 below an acceptable 66 dBA.

The existing noise levels for all of these receptors range from 59 dBA to 67 dBA, and the predicted noise levels with the project range from 64 dBA to 67 dBA. To achieve a 5-decibel reduction, a soundwall 14 feet high would be needed. The reasonable cost for this barrier is \$675,000, and the recommended length of the wall is 1,179 feet. According to Caltrans Design preliminary cost estimates, construction for this soundwall would cost about \$481,000, based on a cost of \$30 per square foot (see Table 2.15). Because the estimated cost of the barrier does not exceed the reasonable cost allowance, the construction of a barrier at this location is considered reasonable.

Soundwall 1 will be located between Fisher and Fifth Streets along the shoulder on the northern section of State Route 180.

Soundwall 2

Soundwall 2 would abate noise for 8 receptors between Millbrook Street and Bond Street south of State Route 180 (see Figure 2-11). These receptors south of State Route 180 represent 14 benefited residences.

Soundwall 2 was originally proposed along the right-of-way south of State Route 180 between Bond Street and Millbrook Street. To prevent graffiti, the soundwall was relocated to the edge of shoulder (see Figure 2-11).

The existing noise levels for all the receptors in this area range from 64 dBA to 68 dBA, and the predicted noise levels with the project range from 66 dBA to 69 dBA. To achieve a 5-decibel reduction for all identified receptors, a soundwall will be built along the edge of shoulder. The soundwall would connect to Soundwall 3 and be 14 feet from Bond Street to Fifth Street and then drop to 12 feet from Fifth Street to Millbrook Street. The reasonable cost for this barrier is \$602,000. The recommended length of the wall is 1,145 feet. According to Caltrans Design preliminary cost estimates, construction for this soundwall would cost about \$430,000, based on a cost of \$35 per square foot (see Table 2.15). Because the estimated cost of the barrier does not exceed the reasonable cost allowance, the construction of a barrier at this location is considered reasonable.

Soundwall 3

Soundwall 3 would abate noise for 5 receptors (receptors 44 through 48) along Third and Fisher Streets south of State Route 180 (see Figure 2-11). Two of these identified receptors south of State Route 180 represent four-unit apartment buildings; therefore, these receptors represent 11 benefited residences. Although Receptors 47 and 48 are predicted to experience noise levels below the noise abatement criterion, they will benefit from the construction of a soundwall and would add to the allowance calculation for this segment. A receiver is considered a benefited receiver if it receives a noise reduction of 5 dBA from the proposed abatement.

The existing noise levels for all of these receptors range from 59 dBA to 64 dBA, and the predicted noise levels with the project range from 64 dBA to 66 dBA. To achieve a 5-decibel reduction, a soundwall 14 feet high would be needed. The reasonable cost for this barrier is \$503,000. The recommended length of the wall is 1,221 feet. According to Caltrans Design preliminary cost estimates, construction for this soundwall will cost about \$451,800, based on a cost of \$30 per square foot (see Table 2.15). Because the estimated cost of the barrier does not exceed the reasonable cost allowance, the construction of a barrier at this location is considered reasonable.

Soundwall 3 would connect to Soundwall 2 and be located between First and Bond Streets along the shoulder on the southern section of State Route 180.

Soundwall 4

Soundwall 4 would abate noise for 27 residents between Eighth Street and Cedar Avenue south of State Route 180 (see Figure 2-10). R59 represents a total of 3 benefitted residents, R18 represents 13 benefitted residents, and R28 represents 11 benefitted residents.

From the comments received before and during the public comment period, Caltrans identified the need to take new noise readings along East Harvey Avenue between Eighth Street and Cedar Avenue (south of State Route 180). The new readings indicated that two soundwalls were warranted at this location. On July 2, 2010, a notice was sent to property owners on East Harvey Avenue between Eighth Street and Cedar Avenue notifying them that additional soundwalls would be added to the project.

The existing noise levels for all of the receptors in this area range from 56 dBA to 61 dBA, and the predicted noise levels with the project range from 63 dBA to 67 dBA. To achieve a 5-decibel reduction for all identified receptors, two overlapping soundwalls will be built, one on the edge of shoulder and the other 15 feet from the state right-of-way. The soundwall on the shoulder will be 12 feet high and 831 feet long and will extend from Eighth Street to Ninth Street (see Figure 2-10). The soundwall located 15 feet from the state right-of-way will be 10 feet high and 1,254 feet long and will extend from Ninth Street to Cedar Avenue. The reasonable cost for this barrier is \$1,279,000. According to Caltrans Design preliminary cost estimates, construction for this soundwall would cost about \$787,600, based on a cost of \$35 per square foot (see Table 2.15). Because the estimated cost of the barrier does not exceed the reasonable cost allowance, the construction of a barrier at this location is considered reasonable.

Table 2.15 Results of Feasibility/Reasonableness Analysis

Soundwall Location	Number of Benefited Residences	Total Reasonable Allowance	Estimated Construction Cost of Soundwall	Feasible	Reasonable
Soundwall 1 - North of State Route 180 between Fisher and Fifth Streets	15	\$675,000	\$481,000	Yes	Yes
Soundwall 2 – South of State Route 180 between Bond and Millbrook Streets	14	\$602,000	\$430,000	Yes	Yes
Soundwall 3 – South of State Route 180 between First and Bond Streets	11	\$503,000	\$451,800	Yes	Yes
Soundwall 4 – South of State Route 180 between Eighth Street and Cedar Avenue	27	\$1,279,000	\$787,600	Yes	Yes

Environmental Consequences under the California Environmental Quality Act

The California Environmental Policy Act noise analysis is completely independent of the National Environmental Policy Act-23 Code of Federal Regulations 772, which is centered on noise abatement criteria. Under the California Environmental Policy Act, the assessment entails looking at the setting of the noise impact and then how large or perceptible any noise increase would be in the given area. Key considerations include the uniqueness of the setting, the sensitive nature of the noise receptors, the magnitude of the noise increase, the number of residences affected, and the absolute noise level.

When determining whether a noise impact is significant under the California Environmental Quality Act, a comparison is made between the predicted no-build noise levels and the predicted build noise level. Significant increase of noise levels under the California Environmental Quality Act is 12 dBA or more above the design year (2035) no-build conditions.

Caltrans identified 44 noise receptors (one church and the rest residences) in the project area. Tables 2.12, 2.13, and 2.14 show the existing and predicted noise levels

at these receptors with and without the project, based on 2010 traffic information supplied by Caltrans District 6 Transportation Planning in April 2010.

Caltrans noise policy is contained in Caltrans' August 2006 *Traffic Noise Analysis Protocol*. This protocol, approved as California's official noise policy by the Federal Highway Administration on August 16, 2006, defines a substantial increase as an increase of 12 decibels over existing noise levels. At no location on the project do project-related noise levels increase by more than 6 decibels over the existing noise levels.

The average healthy ear can barely perceive noise level changes of 3 decibels in an outdoor setting and, for most people, the threshold of hearing is closer to 10 decibels. (See "Section N-2211" of *Caltrans Traffic Noise Analysis Protocol*, August 2006.) Since the project would not cause an increase of more than 6 decibels at any of the receptors and Caltrans' Protocol defines a substantial increase as an increase of 12 decibels, Caltrans has determined there are no significant impacts under California Environmental Quality Act.

Avoidance, Minimization, and/or Noise Abatement under the California Environmental Quality Act

Although Caltrans has determined there are no significant impacts under California Environmental Quality Act, Caltrans intends to incorporate noise abatement in the form of barriers or soundwalls shown in Figures 2-10 and 2-11 for purposes of the National Environmental Policy Act.

Construction Noise

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. It is likely that local noise levels would be affected during equipment operation. Construction noise is regulated by Caltrans Standard Specifications Section 7-1.01I, "Sound Control Requirements," which states that noise levels generated during construction shall comply with applicable local, state, and federal regulations, and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications.

Table 2.16 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dBA at a distance of 50 feet,

and noise produced by construction equipment would be reduced over distance at a rate of about 6 dBA per doubling of distance.

Table 2.16 Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

Source: Federal Transit Administration 1995.

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 7-1.01I and applicable local noise standards. Construction noise would be short term, intermittent, and overshadowed by local traffic noise. Further, implementing the following measures would minimize the temporary noise impacts from construction:

- All equipment would have sound-control devices that are no less effective than those provided on the original equipment. No equipment would have an unmuffled exhaust.
- As directed by Caltrans, the contractor would implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

2.3 Climate Change under the California Environmental Quality Act

Regulatory Setting

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas emissions reduction and climate change research and policy have

increased dramatically in recent years. These efforts are primarily concerned with the emissions of greenhouse gases related to human activity that include carbon dioxide (CO₂), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1, 1, 1, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and proactive approach to dealing with greenhouse gas emissions and climate change at the state level. Assembly Bill 1493 requires the California Air Resources Board (CARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, in order to enact the standards California needed a waiver from the U.S. Environmental Protection Agency (EPA). The waiver was denied by EPA in December 2007. See *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011. However, on January 26, 2009, it was announced that EPA will reconsider its decision regarding the denial of California's waiver. On May 18, 2009, President Obama announced the enactment of a 35.5-mile-per-gallon fuel economy standard for automobiles and light duty trucks, which will take effect in 2012. On June 30, 2009, the EPA granted California the waiver. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The granting of the waiver will also allow California to implement even stronger standards in the future. The state is expected to start developing new standards for the post-2016 model years later this year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this order is to reduce California's greenhouse gas emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020, and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. Assembly Bill 32 sets the same overall greenhouse gas emissions reduction goals while further mandating that the California Air Resources Board create a plan that includes market mechanisms and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases. Executive Order S-20-06 further directs state agencies to begin implementing Assembly Bill 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and greenhouse gas reduction are also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing greenhouse gas emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the EPA to regulate greenhouse gas as a pollutant under the Clean Air Act (*Massachusetts vs. Environmental Protection Agency et al.*, 549 U.S. 497 (2007)). The court ruled that greenhouse gas does fit within the Clean Air Act's definition of a pollutant, and that the EPA does have the authority to regulate greenhouse gas. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)—in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009¹. On May 7, 2010, the final *Light-Duty Vehicle Greenhouse*

¹ <http://www.epa.gov/climatechange/endangerment.html>

Gas Emissions Standards and Corporate Average Fuel Economy Standards was published in the Federal Register².

The final combined U.S. EPA and National Highway Traffic Safety Administration standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards will cut greenhouse gas emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).³

According to *Recommendations by the Association of Environmental Professionals on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents* (March 2007), an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of greenhouse gas. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See CEQA Guidelines sections 15064(i)(1) and 15130. To make this determination, one must compare the incremental impacts of the project with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

As part of its supporting documentation for the Draft Scoping Plan, the California Air Resources Board released an updated version of the greenhouse gas inventory for California (June 26, 2008). The following is a graph from that update that shows the total greenhouse gas emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.

²

<http://www.regulations.gov/search/Regs/contentStreamer?objectId=0900006480a5e7f1&disposition=attachment&contentType=pdf>

³ <http://www.epa.gov/climatechange/endangerment.html>

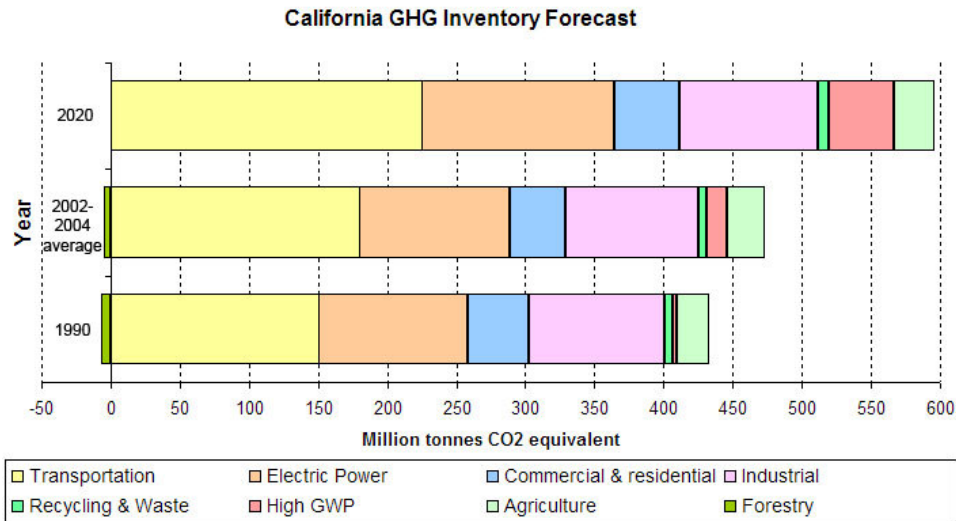


Figure 2-12 California Greenhouse Gas Inventory

Taken from: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human-made greenhouse gas emissions are from transportation (see Climate Action Program at Caltrans (December 2006), Caltrans has created and is implementing a Climate Action Program (published in December 2006). This document can be found at: <http://www.dot.ca.gov/docs/ClimateReport.pdf>

Project Analysis

One of the main strategies in the Department's Climate Action Program to reduce greenhouse gas emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 mph; the most severe emissions occur from 0-25 miles per hour. To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, greenhouse gas emissions, particularly carbon dioxide, may be reduced.

The project would construct a braided ramp system that would eliminate major weaving movements within the freeway system, reduce traffic congestion, improve traffic operations, lower rear-end and traffic weaving-related collisions, and enhance traffic safety within freeway-to-freeway interchanges. The project is not a capacity-

increasing project but, by adding the braided ramp configuration to this segment of State Route 180, additional traffic could move through the area more efficiently. The intent of this project is to decrease the number of vehicles using the mainline (State Route 180) by providing ramps to carry traffic directly to State Routes 41 and 168. Gasoline and diesel-powered vehicles operate less efficiently at low speeds. Currently, this segment of State Route 180 is experiencing level of service “F” during peak hours. If the project were not constructed, level of service would continue to deteriorate. The Build Alternative would result in less congestion and an increased level of service.

Greenhouse Gas Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction greenhouse gas emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement life, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

CEQA Conclusion

With the project resulting in less congestion and an increase in efficiency, it is anticipated that daily carbon dioxide emissions would decrease as a result of the project. It is Caltrans determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a determination regarding significance of the project’s direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following sections.

AB 32 Compliance

Caltrans continues to be actively involved on the Governor’s Climate Action Team as the California Air Resources Board works to implement the Governor’s executive orders and help achieve the targets set forth in Assembly Bill 32. Many of the

strategies Caltrans is using to help meet the targets in Assembly Bill 32 come from the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a \$238.6 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including \$100.7 billion in transportation funding through 2016⁴. As shown in Figure 2-13, the Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in greenhouse gas emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion. The Strategic Growth Plan relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

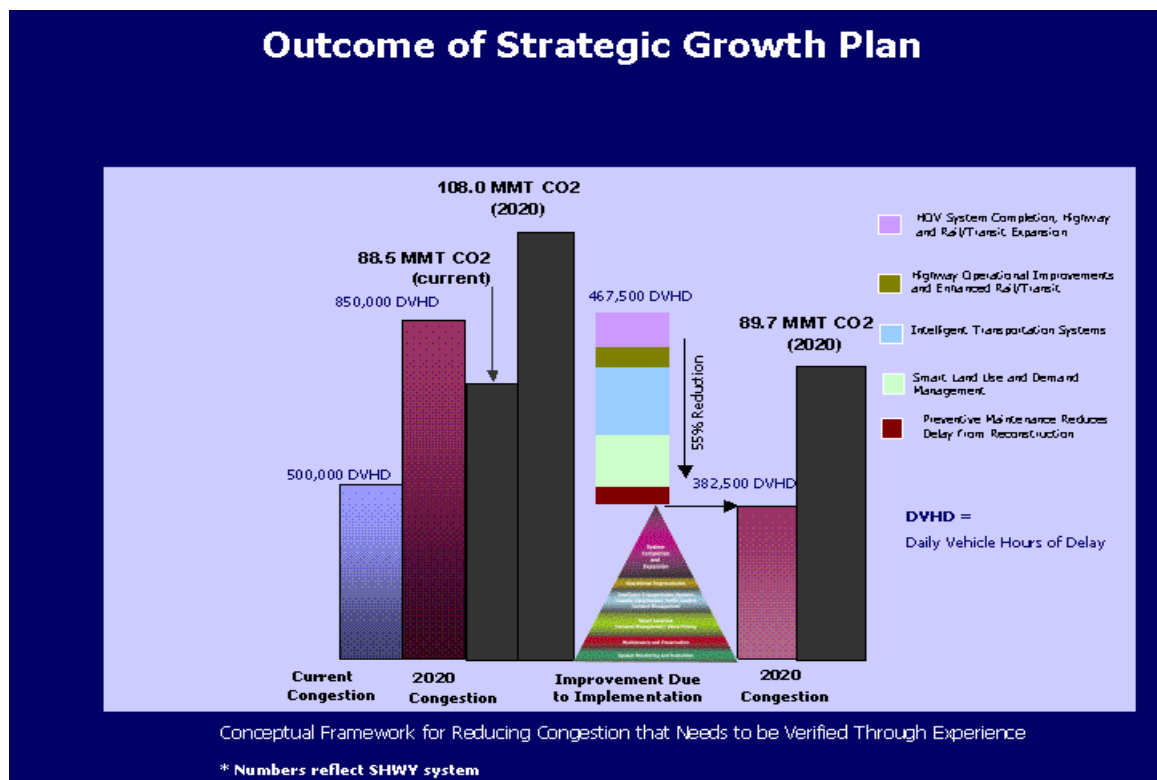


Figure 2-13 Outcome of Strategic Growth Plan

⁴ 2 Governor's Strategic Growth Plan, Fig. 1 (<http://gov.ca.gov/pdf/gov/CSGP.pdf>)

As part of the Climate Action Program at Caltrans (December 2006, <http://www.dot.ca.gov/docs/ClimateReport.pdf>), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by the EPA and the California Air Resources Board. Lastly, the use of alternative fuels is also being considered; the Department is participating in funding for alternative fuel research at the University of California at Davis.

Table 2.17 summarizes the Department and statewide efforts that Caltrans is implementing to reduce greenhouse gas emissions. For more detailed information about each strategy, please see Climate Action Program at Caltrans (December 2006), available at <http://www.dot.ca.gov/docs/ClimateReport.pdf>.

Adaptation Strategies

“Adaptation strategies” refer to how Caltrans and others can plan for the effects of climate change on the state’s transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

Table 2.17 Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO2 Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.007	2.17
Mainstream Energy & Greenhouse Gas into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.45 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 0.36	3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.67

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, Governor Schwarzenegger signed Executive Order S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change.

The California Resources Agency [now the Natural Resources Agency, (Resources Agency)], through the interagency Climate Action Team, was directed to coordinate with local, regional, state and federal public and private entities to develop a state Climate Adaptation Strategy. The Climate Adaptation Strategy will summarize the best known science on climate change impacts to California, assess California's vulnerability to the identified impacts and then outline solutions that can be implemented within and across state agencies to promote resiliency. As part of its development of the Climate Adaptation Strategy, the Resources Agency was directed to request the National Academy of Science to prepare a Sea Level Rise Assessment Report by December 2010 to advise how California should plan for future sea level rise. The report is to include:

- Relative sea level rise projections for California, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates
- The range of uncertainty in selected sea level rise projections
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems
- A discussion of future research needs regarding sea level rise for California

Furthermore, Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level affecting safety, maintenance and operational improvements of the system and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Prior to the release of the final Sea Level Rise Assessment Report, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. However, all projects that have filed a Notice of Preparation, and/or are programmed for construction funding the next five years (through 2013), or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these planning guidelines. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data. (Executive Order S-13-08 allows some exceptions to this planning requirement.)

The Braided Ramps Project was given approval by the California Transportation Commission to be included in a statewide demonstration program to use the design-build process. This process allows the state to advertise a project prior to the design being completed. The project will be open to traffic in 2015. The project is not subject to tsunamis, seiche, or ocean tides. Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being done as part of Governor's Schwarzenegger's Executive Order on Sea Level Rise and is mobilizing to be able to respond to the National Academy of Science report on Sea Level Rise Assessment, due to be released by December 2010.

On August 3, 2009, the Natural Resources Agency in cooperation and partnership with multiple state agencies released the 2009 California Climate Adaptation Strategy Discussion Draft, which summarizes the best known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The release of the draft document set in motion a 45-day public comment period. Led by the California Natural Resources Agency, numerous other state agencies were involved in the creation of a discussion draft, including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The discussion draft focuses on sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. The strategy is in direct response to Gov. Schwarzenegger's November

2008 Executive Order S-13-08 that specifically asked the Natural Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events.

As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings. A revised version of the report was posted on the Natural Resource Agency website on December 2, 2009; it can be viewed at: <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change impacts, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able to review its current design standards to determine what changes, if any, may be warranted to protect the transportation system from sea level rise.

Chapter 3 **Comments and Coordination**

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings, and interagency coordination meetings. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

Coordination with Public Agencies

On April 29, 2010, interagency consultation for PM₁₀ and PM_{2.5} hot-spot conformity was sent out to the Environmental Protection Agency. On May 10, 2010, the Environmental Protection Agency concurred that the project was a Project of Air Quality Concern and that the preliminary results indicated that the project would not result in any violation of federal standards.

Coordination with Native American Groups

On January 26, 2010, the Native American Heritage Commission was consulted to conduct a Sacred Lands inventory search and to provide a list of Native American groups to be contacted about the project. The Native American Heritage Commission identified 13 tribal groups, with whom Caltrans staff consulted regarding cultural resources within the project area. No immediate concerns were identified for this project.

Public Participation

On June 10, 2010, Caltrans held a public hearing for the State Route 180 Braided Ramps Project from 5:00 p.m. to 7:30 p.m. at Hidalgo Elementary School at 3550 East Thomas Avenue in Fresno, California. The purpose of the hearing was to provide the public and other interested parties with information about the Build and No-Build Alternatives as well as the project design. About 30 people attended the public hearing. One written comment and three verbal comments were received at the hearing. Two comments were sent by mail and one was sent by email. Most people were concerned with the soundwall location and if the project required any additional right-of-way (see Appendix E, Comments and Responses).

A public notice announcing the public hearing and the availability of the draft environmental document was published in *The Fresno Bee* on June 2, 2010. The public notice featured the time and date of the public hearing, a project location map, and other project information. The notice of availability and a copy of the public notice were mailed to residents, to state, federal, and local officials, and to other agencies and interested groups.

The format of the public hearing was informal. Caltrans staff invited each attendee to view the displays throughout the room, ask questions, drop written comments into the comment box provided, mail comments to Caltrans, or give verbal comments to the court reporter. Caltrans provided a Spanish interpreter and a Hmong interpreter to translate questions and answers.

Letter to Property Owners

From the comments received before and during the public comment period, Caltrans identified the need to take new noise readings along East Harvey Avenue between Eighth Street and Cedar Avenue (south of State Route 180). The new readings showed that two soundwalls were warranted at this location. On July 2, 2010, a notice was sent to property owners on East Harvey Avenue between Eighth Street and Cedar Avenue notifying them that additional soundwalls will be added to the project. See Figures 3-1 and 3-2.



STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY	ARNOLD SCHWARZENEGGER, Governor
DEPARTMENT OF TRANSPORTATION 2015 EAST SHIELDS AVENUE, SUITE 100 FRESNO, CA 93726-5428 PHONE (559) 243-8178 FAX (559) 243-8215 TTY (559) 488-4066	 <i>Flex your power! Be energy efficient!</i>
July 2, 2010	
Subject: Proposed Soundwalls for the State Route 180 Braided Ramps Project EA 06-0C1100 - Postmiles R58.4/R60.4	
<p>This notice is being sent to you because your property has been identified as a property that could benefit from the placement of two soundwalls that would be constructed along the south side of State Route 180 (in between Cedar and Eighth Street). These newly proposed soundwalls were not included in the Draft Environmental Document or presented at the Public Hearing held June 10, 2010. The first soundwall (Soundwall 1) would be 12 feet high, 831 feet long, and would be placed along the shoulder. The second soundwall (Soundwall 2) would be 10 feet high, 1,254 feet long, and would be placed 15 feet away from the right of way. Please view the back of this letter to see a graphic of the soundwall placement.</p> <p>If you would like to provide comments about the newly proposed soundwalls, please send them no later than July 23, 2010 to Caltrans Environmental Planning, G. William "Trais" Norris III, at 2015 East Shields Avenue, Suite 100, Fresno, CA 93726, or email them to trais_norris@dot.ca.gov.</p> <p>If you have any questions regarding this matter, please contact me at (559) 243-8178 or trais_norris@dot.ca.gov, or Neil Bretz, Project Manager, at (559) 243-3465 or neil_bretz@dot.ca.gov.</p> <p>Sincerely,</p> <p></p> <p>G. WILLIAM "TRAIS" NORRIS, III, Branch Chief Sierra Pacific Environmental Analysis Branch</p> <p><i>"Caltrans improves mobility across California"</i></p>	

Figure 3-1 Letter to Property Owners

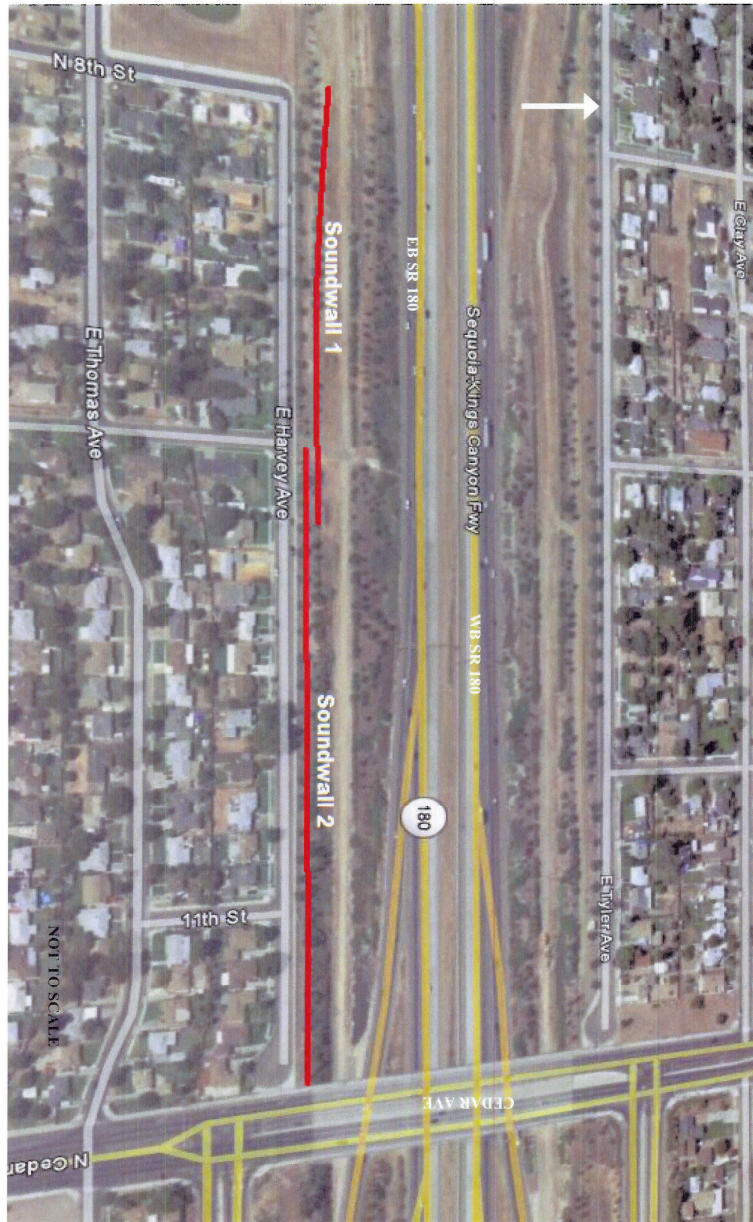


Figure 3-2 Letter to Property Owners (Soundwall Map)

Chapter 4 List of Preparers

This document was prepared by the following Caltrans Central Region staff:

Allam Alhabaly, Transportation Engineer. B.S., California State University, Fresno, School of Engineering; 10 years of experience in environmental technical studies, with emphasis on noise studies. Contribution: Prepared Noise Report.

Rebecca Bakhdoud, Transportation Engineering Technician. B.A., Liberal Studies/Education, Minor in Mathematics, California State University, San Bernardino; 9 years of CADD/Microstation support and visual design experience. Contribution: Designed graphics and maps for the Initial Study.

William Bigbee, Transportation Engineer. B.S., Civil Engineering; 9 years experience. Contribution: Traffic Operations Analysis.

Harpreet Binning, Project Engineer, P.E. M.S., California State University, Fresno; B.S., California State University, Fresno; 4 years of structural engineer experience and 4 years of transportation engineer experience. Contribution: Project Engineer.

Neil Bretz, Project Manager. B.S., Civil Engineering, California State University, Fresno; 22 years experience at Caltrans, 12 years in Project Management. Contribution: Project scheduling and funding and overall project coordination.

Abdulrahim Chafi, Transportation Engineer. Ph.D., Environmental Engineering, California Coast University, Santa Ana; B.S., M.S., Chemistry and M.S., Civil/Environmental Engineering, California State University, Fresno; 14 years of environmental technical studies experience. Contribution: Air Quality Report.

Ken Doran, Engineering Geologist. M.S., Geology, California State University, Fresno; B.S., Geology, California State University, Fresno; 10 years of hazardous waste assessment experience. Contribution: Hazardous Waste Memo.

Rajeev Dwivedi, Associate Engineering Geologist. Ph.D., Environmental Engineering, Oklahoma State University, Stillwater; 18 years of environmental technical studies experience. Contribution: Water Quality Report.

Steve M. Lee, Project Engineer, P.E. B.S., Civil Engineering, California State University, Fresno; 18 years of civil engineering experience. Contribution: Project Engineer.

Ramon Lopez-Maciel, P.E. B.S., Civil Engineering, San Diego State University; 12 years of Civil Engineering experience. Contribution: Hydrology and Floodplain Studies.

Jennifer Lugo, Associate Environmental Planner. M.A., History, California State University, Fresno; B.A., History, Minor Political Science, California State University, Fresno; 5 years of environmental planning experience; 1 year of architectural history experience. Contribution: Environmental Coordinator.

Steven McDonald, Senior Transportation Engineer. RCE. B.S., California State University, Fresno; 16 years of experience. Contribution: Forecasting and modeling.

Wendy M. Nettles, Associate Environmental Planner. M.A., Anthropology, Florida State University; B.A., Anthropology, Florida State University; 18 years of archaeology/cultural resources management experience. Contribution: Principal Investigator, Prehistoric and Historical Archaeology. Contribution: Archeological Study Report with attached Historic Property Survey Report.

Thanh Nguyen, Sr. Transportation Engineer. M.S.C.E, California State University, Fresno; 26 years experience in transportation engineering design and consultant oversight. Contribution: Design Manager, Project Design Supervisor.

G. William “Trais” Norris, III, Senior Environmental Planner. B.S., Urban Regional Planning, California State Polytechnic University, Pomona; 11 years of land use, housing, redevelopment, and environmental planning experience. Contribution: Environmental Manager, Branch Chief Sierra Pacific Environmental Analysis Branch.

Keri O'Connor, Associate Environmental Planner (Biology). B.S., Biology with an Emphasis in Ecology, California State University, Fresno; 3.5 years of biological compliance experience with Caltrans. Contribution: Biological studies.

Gloria Ramirez, Landscape Associate. M.A., Landscape Architecture, University of California, Berkeley; B.A., Landscape Architecture, University of California, Berkeley; 10 years landscape associate experience. Contribution: Visual Impact Assessment.

Richard C. Stewart, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; 21 years of hazardous waste and water quality experience; 4 years of paleontology/geology experience. Contribution: Prepared Paleontology Memo.

Roger Valverde, Graphic Designer II. Certificate of Multimedia, Mount San Jacinto and California State University, Fresno; 27 years of visual design and public participation experience. Contribution: Designed graphics and maps for the Initial Study.



Appendix A California Environmental Quality Act Checklist

The following checklist identifies physical, biological, social, and economic factors that might be affected by the project. The California Environmental Quality Act impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.”

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

II. AGRICULTURE AND FOREST RESOURCES:

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Result in the loss of forestland or conversion of forestland to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

V. CULTURAL RESOURCES: Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VI. GEOLOGY AND SOILS: Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VII. GREENHOUSE GAS EMISSIONS: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.			
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IX. HYDROLOGY AND WATER QUALITY:

Would the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XI. MINERAL RESOURCES: Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XII. NOISE: Would the project result in:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIII. POPULATION AND HOUSING: Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIV. PUBLIC SERVICES:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XV. RECREATION:

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVI. TRANSPORTATION/TRAFFIC: Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVII. UTILITIES AND SERVICE SYSTEMS:

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix B Title VI Policy Statement

STATE OF CALIFORNIA — BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

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*Flex your power!
Be energy efficient!*

August 25, 2009

TITLE VI POLICY STATEMENT

The California State Department of Transportation under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.


RANDELL H. IWASAKI
Director

"Caltrans improves mobility across California"



Appendix C **Minimization and/or Mitigation Summary**

Environmental commitments for the project are described in the Avoidance, Minimization, and/or Mitigation sections in their respective environmental categories in this Initial Study. This section summarizes these environmental commitments.

Utilities and Emergency Services

During construction, a Traffic Management Plan will be developed to accommodate local traffic patterns and reduce delay, congestion, and accidents. Temporary lanes will be constructed in the median to shift the existing mainline lanes to provide room for the construction of the two bridges. Traffic would be reduced to a minimum of one lane in each direction during night work and two lanes in each direction during day work. Alternative ramps will be designated while the existing ramps are closed. The Traffic Management Plan would include, but is not limited to:

- Release of information through brochures and mailers, press releases, and advertisements, managed by the Public Information Office
- Use of fixed and portable changeable message signs
- Incident management through COZEEP (Construction Zone Enhancement Enforcement Program) and the Transportation Management Center
- Night work and project phasing

Traffic and Transportation/Pedestrian and Bicycle Facilities

Construction for the project will temporally affect travel on the connections and mainline of this segment of State Route 180. Please see the Utilities and Emergency Service section above for further information.

Visual/Aesthetics

Where feasible, existing mature vegetation will be preserved or replaced. Additional highway planting is necessary and would be addressed in a separate highway planting project that would come after the braided ramps project. Per Caltrans policy, warranted highway planting is required on existing freeways when the area is affected by major modification to the highway and where adjacent properties are developed at the time of the roadway construction contract acceptance. The warranted highway planting will help lessen visual impacts associated with the project.

Planting will be included to reduce the visual scale and soften the appearance of the new structures. In addition, architectural treatments, such as color and/or textures will be applied to vertical surfaces. These architectural treatments would correlate with other structures along State Route 180. The aesthetic treatments will be coordinated through the Caltrans Landscape Architecture unit and the Bridge Aesthetics unit at Caltrans headquarters throughout the various phases of the project.

Hydrology and Floodplain

To maintain storage capacity, two side ditches will be constructed to help the affected Caltrans basins. One side ditch will be needed on the northern side and one on the southern side near the Fresno Metropolitan Flood Control District basin.

Air Quality

The project will be subject to San Joaquin Valley Air Pollution Control District Rule 9510 (Indirect Source Review Rule). This rule applies to construction equipment emissions for transportation projects that exceed 2.0 tons of either PM₁₀ and/or nitrogen oxide air pollutants. Mitigation options include using a construction fleet that is “cleaner than the California state average” and/or in the form of fees paid to the District. The contractor will be responsible for the Indirect Source Review Air Impact Analysis and any applicable fees.

Short-Term Construction Impacts

Construction activity may generate a temporary increase in mobile source air toxics emissions. The use of diesel retrofit technologies outlined in the Congestion Mitigation and Air Quality Improvement Program provisions (technologies that are designed to lessen a number of mobile source air toxics) would help lower short-term mobile source air toxics.

Construction mitigation includes strategies that reduce engine activity or reduce emissions per unit of operating time. Operational agreements that reduce or redirect work or shift times to avoid community exposures would have positive benefits when sites are near vulnerable populations. The use of technological adjustments to equipment, such as off-road dump trucks and bulldozers, would also be appropriate strategies. These technological fixes could include particulate matter traps, oxidation catalysts, and other devices that provide an after-treatment of exhaust emissions. The use of clean fuels, such as ultra-low sulfur diesel, also would be a very cost-beneficial strategy. The Environmental Protection Agency has listed a number of approved

diesel retrofit technologies; many of these can be deployed as emissions mitigation measures for equipment used in construction.

During construction, the project would generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants will be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses.

Dust and odors at some residences very close to the right-of-way could cause occasional annoyance and complaints. The project will be subject to a Dust Control Permit from the San Joaquin Unified Air Pollution Control District. Caltrans Standard Specifications pertaining to dust control and dust palliative requirement are a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 7-1.01F “Air Pollution Control” and Section 10 “Dust Control,” require the contractor to comply with the San Joaquin Valley Air Pollution Control District rules, ordinances, and regulations.

Noise and Vibration

For purposes of the National Environmental Policy Act, soundwalls must be considered because receptors have been identified as approaching or exceeding the noise abatement criterion (67 dBA) by the design year of 2035.

Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of four soundwalls.

The first soundwall would be built along the shoulder on the northern section of State Route 180 between Fisher and Fifth Streets. The soundwall will be 1,179 feet long with a height of 14 feet.

The second soundwall will be built along the edge of shoulder on the southern section of State Route 180. This soundwall will connect to Soundwall 3 and be 14 feet from Bond Street to Fifth Street and then drop to 12 feet from Fifth Street to Millbrook Street. The length of this soundwall will be 1,145 feet.

The third soundwall will be built along the edge of shoulder on the southern section of State Route 180. The soundwall will be 14 feet high and 1,221 feet long between First Street and Bond Street.

The fourth soundwall will be two overlapping soundwalls, one constructed on the edge of shoulder and the other 15 feet from the state right-of-way. The soundwall on the shoulder will be 12 feet high and 831 feet long and will extend from Eighth Street to Ninth Street. The soundwall located 15 feet from the state right-of-way will be 10 feet high and 1,254 feet long and will extend from Ninth Street to Cedar Avenue.

Appendix D Regulatory Settings

This appendix contains general information about laws and regulations that apply to transportation projects and the topics covered in Chapter 2 of this document.

Traffic and Transportation/Pedestrian and Bicycle Facilities

The Federal Highway Administration directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

Caltrans and the Federal Highway Administration are committed to carrying out the 1990 Americans with Disabilities Act by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

Visual/Aesthetics

The National Environmental Policy Act of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings [42 United States Code 4331(b)(2)]. To further emphasize this point, the Federal Highway Administration in its implementation of the National Environmental Policy Act [23 United States Code 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, the California Environmental Quality Act establishes that it is the policy of the state to take all action necessary to provide the people of the state “with...enjoyment of *aesthetic*, natural, scenic, and historic environmental qualities.” [California Public Resources Code Section 21001(b)]

Water Quality and Storm Water Runoff

Section 401 of the Clean Water Act requires water quality certification from the State Water Resources Control Board or from a Regional Water Quality Control Board when the project requires a Clean Water Act Section 404 permit. Section 404 of the Clean Water Act requires a permit from the U.S. Army Corps of Engineers to discharge dredged or fill material into waters of the United States.

Along with Section 401 of the Clean Water Act, Section 402 of the Clean Water Act establishes the National Pollutant Discharge Elimination System permit for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the National Pollutant Discharge Elimination System program to the State Water Resources Control Board and nine Regional Water Quality Control Boards. The State Water Resources Control Board and Regional Water Quality Control Boards also regulate other waste discharges to land within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act.

The State Water Resources Control Board has developed and issued a statewide National Pollutant Discharge Elimination System permit to regulate storm water discharges from all Caltrans activities on its highways and facilities. Caltrans construction projects are regulated under the statewide permit, and projects performed by other entities on Caltrans right-of-way (encroachments) are regulated by the State Water Resources Control Board's Statewide General Construction Permit.

All construction projects over 1 acre require a Storm Water Pollution Prevention Plan to be prepared and implemented during construction. Caltrans activities of less than 1 acre require a Water Pollution Control Program.

Air Quality

The Clean Air Act, as amended in 1990, is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the concentration of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards. Standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), lead (Pb), and sulfur dioxide (SO₂).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve federal actions to support programs or projects that

are not first found to conform to the State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity is concerned with how well the region is meeting the standards set for carbon monoxide, nitrogen dioxide, ozone, and particulate matter. California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20.

Based on the projects included in the Regional Transportation Plan, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as the Council of Fresno County Governments and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the Regional Transportation Plan is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the Regional Transportation Plan must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the Regional Transportation Plan, then the proposed project is deemed to meet regional conformity requirements for purposes of the project-level analysis.

Conformity at the project-level also requires “hot spot” analysis if an area is in “nonattainment” or “maintenance” for carbon monoxide (CO) and/or particulate matter. A region is a “nonattainment” area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as non-attainment areas but have recently met the standard are called “maintenance” areas. “Hot spot” analysis is essentially the same, for technical purposes, as carbon monoxide or particulate matter analysis performed for National Environmental Policy Act and California Environmental Quality Act purposes.

Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the carbon monoxide standard to be violated, and in “nonattainment” areas, the project must not cause any increase in the number and severity of violations. If a known carbon monoxide or particulate matter

violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Noise and Vibration

The National Environmental Policy Act of 1969 and the California Environmental Quality Act provide the broad basis for analyzing and abating the effects of highway traffic noise. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between the National Environmental Policy Act and the California Environmental Quality Act.

California Environmental Quality Act

The California Environmental Quality Act requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under the California Environmental Quality Act, then the act dictates that mitigation measures must be incorporated into the project unless such measures are not feasible.

National Environmental Policy Act and 23 Code of Federal Regulations 772

For highway transportation projects with Federal Highway Administration involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 Code of Federal Regulations 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria that are used to determine when a noise impact would occur.

The noise abatement criteria differ depending on the type of land use under analysis. For example, the criterion for residences (67 decibels) is lower than the criterion for commercial areas (72 decibels).

Table D.1 lists the noise abatement criteria for use in the National Environmental Policy Act and 23 Code of Federal Regulations 772 analysis. Figure D-1 shows the noise levels of typical activities.

Table D.1 Activity Categories and Noise Abatement Criteria

Activity Category	Noise Abatement Criteria, A-weighted Noise Level, Leq(h)	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	--	Undeveloped lands
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: Caltrans Traffic Noise Analysis Manual, 1998

A-weighted decibels are adjusted to approximate the way humans perceive sound. Leq(h) is the steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual time-varying levels over one hour.

Figure D-1 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

In accordance with Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*, August 2006, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12-decibel or more increase) or when the future noise level with the project approaches or exceeds the noise abatement criteria. Approaching the noise abatement criteria is defined as coming within 1 decibel of the criteria.

If it is determined that the project would have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include residents' acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies' input, newly constructed development versus development pre-dating 1978, and the cost per benefited residence.

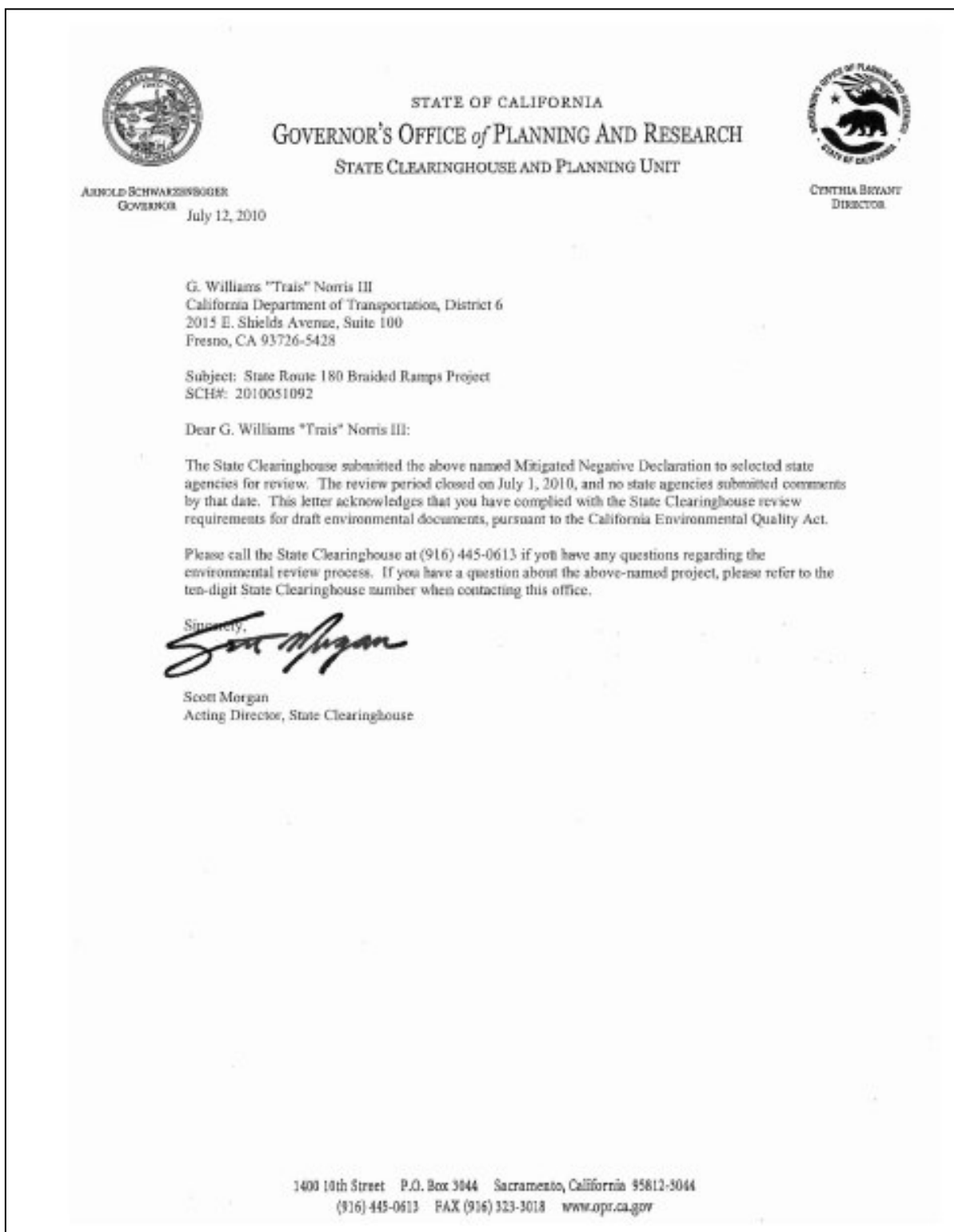
Feasibility of noise abatement is basically an engineering concern. A minimum 5-decibel reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations.



Appendix E Comments and Responses

This appendix contains the comments received during the public circulation and comment period from June 2, 2010 to July 1, 2010. A Caltrans response follows each comment presented.

Comment from the State Clearinghouse and Planning Unit



Response to Comment from the State Clearinghouse

The State Clearinghouse letter acknowledges that Caltrans has complied with review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Comment from the Fresno County Clerk (returned Caltrans letter with date stamp showing receipt—no other comment)

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION

DISTRICT 6

2015 EAST SHIELDS AVENUE

SUITE 100

FRESNO, CA 93726-5428

PHONE (559) 243-8178

FAX (559) 243-8215

TTY (559) 488-4066



Flex your power!
Be energy efficient!

FILED

JUN 01 2010

FRESNO COUNTY CLERK

By *[Signature]* DEPUTY

Notice of Availability of the Initial Study/Proposed Mitigated Negative Declaration and Public Hearing for the State Route 180 Braided Ramps Project

The California Department of Transportation (Caltrans) proposes to construct new braided branch connections between State Routes 41, 180, and 168 to improve traffic operations, reduce congestion, and enhance traffic safety within freeway-to-freeway interchanges. This letter is to inform you that the proposed project's Draft Environmental Document is available for public review between June 2, 2010 and July 1, 2010 at the following locations:

- Fresno County Library, 2420 Mariposa Street, Fresno, CA 93721
- Caltrans District Office Public Affairs, 1352 W. Olive Avenue, Fresno, CA 93778 (except for the first three Fridays of the month due to state mandated furloughs)

This letter is to inform you that the Draft Environmental Document will be in the public circulation phase between June 2, 2010 and July 1, 2010. Public comments will be accepted until **July 1, 2010**. Please submit comments to Caltrans Environmental Planning, G. William "Trais" Norris III, at 2015 East Shields Ave., Suite 100, Fresno, CA 93726, or email them to trais_norris@dot.ca.gov.

As part of the Environmental Document circulation process, Caltrans will hold a Public Hearing to obtain public input on the Draft Environmental Document. At the Public Hearing, Caltrans will present preliminary design plans and environmental study information and discuss concerns and answer questions. The hearing will be informal and you may arrive at any time.

Date: Thursday, June 10, 2010
Time: 5:00 p.m. – 7:30 p.m.

Location: Hidalgo Elementary School Cafeteria
3550 E. Thomas Ave.
Fresno, CA 93702

If you have any questions, please contact me at (559) 243-8178, or Neil Bretz, District 6 Project Manager, at (559) 243-3465.

Sincerely,

[Signature]

G. WILLIAM "TRAIS" NORRIS III
Senior Environmental Planner

"Caltrans improves mobility across California"

E201010000177

Response to Comment from the Fresno County Clerk

With the County Clerk's receipt date stamp on the Caltrans letter, the Fresno County Clerk acknowledges that the draft environmental document was filed with the Fresno County Clerk.

Comments from James and Judith Palmer

James and Judith Palmer submitted comments on the project several times via emails, a comment card, and a neighborhood petition. The documents are displayed on the following six pages and all similar comments submitted are identified with the same number.



Jennifer
Lugo/D06/Caltrans/CAGov
07/07/2010 02:46 PM

To
cc
bcc
Subject Fw: 180 Soundwall



Judith Palmer
<jjf5864@yahoo.com>
07/03/2010 04:07 PM

To trais_norris@dot.ca.gov
cc
Subject 180 Soundwall

Mr. Norris, Today we received a letter from you speaking about a sound wall adjacent to 180 from 8th st. to Cedar . I sent in a petition a few months ago with approx. nine home owners in this area that agree upon a sound wall. My wife Judith and I have lived here 36 years. Since 180 was constructed the noise sounds like an racetrack . Its been over the maximum decible reading all this time by your tests I requested within a year after 'completion'.

Recently a fellow came by and took sound readings. Readings in front and back yard were well over your limits, again. We would appreciate this action taken place . 180 was proposed in 1949. We faced a political mess for decades wondering if our house would be taken for 11th st .to Thomas.

Thanks for the information Mr. Norris. James K. Palmer
Judith C. Palmer
4050 E. Harvey
Fresno ,Ca, 93702
233 7596
jjf5864@yahoo.com

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Neil
Bretz/D06/Caltrans/CAGov
06/01/2010 07:46 AM

To Jennifer Lugo/D06/Caltrans/CAGov@DOT
cc
bcc
Subject Fw: 180 alteration ,Fresno

History: This message has been forwarded.

FYI

----- Forwarded by Neil Bretz/D06/Caltrans/CAGov on 06/01/2010 07:46 AM -----



Judith Palmer
<jjf5864@yahoo.com>
05/29/2010 11:54 AM

To neil_bretz@dot.ca.gov
cc
Subject 180 alteration ,Fresno

Hello Neil, we got your letter about the plans for alteration of 180 inbetween 168 and 41 . We will be at the Hidalgo Elementary meeting to check out the latest ..I have known for ten years that those dirt roads would someday be used for traffic.. We attended meetings for decades pertaining to 180 . We live on Harvey on south side of it.. After construction I requested sound tests to be done by Cal Trans twice.. It was way over the maximum decibal allowance then.. Now we will have another lane approx 75 feet closer to us.. I collected signatures of nine home owners on Harvey between Cedar and 9th st who want a sound wall installed if you build this new lane. Most others on this street im unable to speak to because they cant speak English and rent. Vines need to be planted immediately like on east side of Cedar .This will prevent grafiti extemity. One other request. Hire a firm who plants correct bushes that grow ,not another outfit who used gargage. Many plants here are dead or only one foot tall after over ten years .. cu at meeting, James K. Palmer , Judith C.Palmer 4050 E.Harvey , Fresno ,Ca. 93702 jjf5864@yahoo.com ph # 233 7596

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James K. Palmer
4050 E. Harvey
Fresno, Ca.

March 21, 1010

233-7596 93702

Mr. Romero,

Thanks for your communication with us. Here is a petition showing positive, negative answers and non English speaking people from Cedar to 9th St. Most say; "without any new lane closer to us, we can live with the sound, but, if a new lane is installed we prefer a sound barrier wall covered with plant life ASAP."

Thanks,

James K. Palmer
4050 E. Harvey
Fresno, 93702
233-7596
JF5054@yahoo.com

1

3

✓ non English speaking

Collected by James H. Palmer
4050 E. Harvey
233 7596

This petition represents residents on Harvey Av
in Fresno from Cedar Ave. to 9th St who
are in favor of a sound wall being installed
if CalTrans installs another lane approx 75'
closer to us.

4186 ✓

4176 Angelo Sanchez

4166 ✓

4156 Thomas J. Hargis
4146 Rachel Quint

4126 Alberto Ceja

4116 Alex Teller

4106 Stanley McAllister

4050 James H. Palmer

4038 evicted party

4028 Soledad Ruiz

✓ 4018 Negative

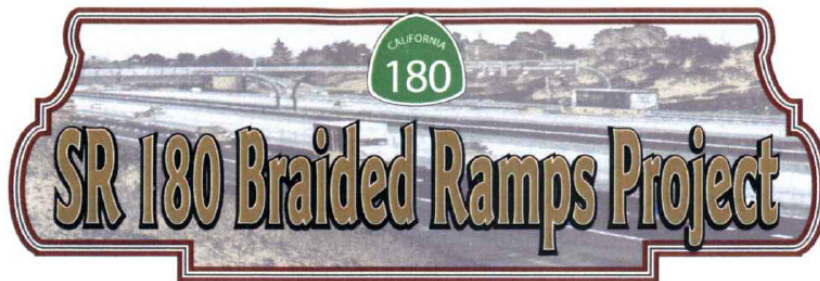
~~3958~~ 3958 Non English speaking

✓ 3948 Negative

~~3938~~ 3938 Non English speaking

3928 Benjamin Cisneros

738 9th St. Robert W. Jensen



Public Hearing

NAME: James & Judith Palmer

ADDRESS: 4050 E. Harvey CITY: Fresno ZIP: 93702

REPRESENTING: Harvey St - (Cedar to 9th) adjacent to 180

Do you wish to be added to the project mailing list? ☒ YES ☐ NO

Please drop comments in the Comment Box or

Mail to: California Department of Transportation
G. William "Trai" Norris III
Sierra Pacific Environmental Analysis Branch
2015 E. Shields Avenue, Suite 100
Fresno, CA 93726

I would like the following comments filed in the record (please print):

I sent you a petition approx six weeks ago with nine home-owners not renters who would like to see a sound barrier wall installed upon your construction of another Lane 7.5 feet closer to us. Ten years ago I requested sound tests here after 180 was built. With a minimum of traffic compared to today both decibal readings were above your maximum then. Was one word said by Cal Trans. "Of course not." Now it's the time. James R. Palmer

Closing response date: July 1, 2010

Response to Comment from James and Judith Palmer

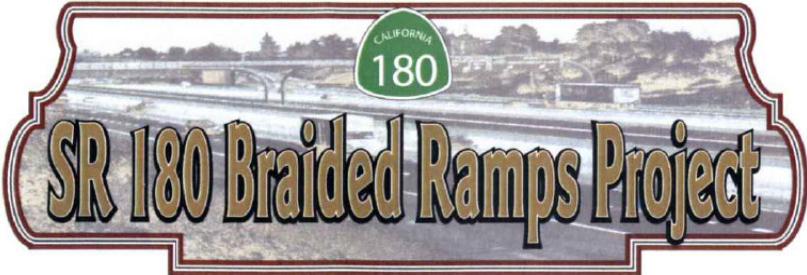
Thank you for your comments on the project.

Response to comment #1: From the comments received before and during the public comment period, Caltrans identified the need to take new noise readings along East Harvey Avenue between Eighth Street and Cedar Avenue (south of State Route 180). The new readings showed that two soundwalls were warranted at this location. On July 2, 2010, a notice was sent to property owners on East Harvey Avenue between Eighth Street and Cedar Avenue notifying them that additional soundwalls will be added to the project. Two overlapping soundwalls will be constructed, one on the edge of shoulder and the other 15 feet from the state right-of-way. The soundwall on the shoulder will be 12 feet high and 831 feet long and will extend from Eighth Street to Ninth Street (see Figure 2-11). The soundwall located 15 feet from the state right-of-way will be 10 feet high and 1,254 feet long. For further information, please refer to the noise section of this document.

Response to comment #2: This project is contained within the state right-of-way. No additional right-of-way is required.

Response to comment #3: A separate landscaping project will follow within two years of the completion of the State Route 180 Braided Ramps Project. The landscaping project will include the planting of vines, trees, and scrubs to screen and soften the soundwalls.

Comment from Robert Garcia



SR 180 Braided Ramps Project

Public Hearing

NAME: ROBERT GARCIA

ADDRESS: 646 N FRESH ST CITY: FRESNO ZIP: 93701

REPRESENTING: _____

Do you wish to be added to the project mailing list? ☒ YES ☐ NO

Please drop comments in the Comment Box or

Mail to: California Department of Transportation
G. William "Travis" Norris III
Sierra Pacific Environmental Analysis Branch
2015 E. Shields Avenue, Suite 100
Fresno, CA 93726

I would like the following comments filed in the record (please print): 4

I LIVE AT 646 N. FRESH
STREET CORNER OF
THOMAS BY 180 I WOULD
LIKE TO KNOW IF ITS
GOING TO AFFECT ME
OR IF I WOULD HAVE
MOVE.

Response to Comment from Robert Garcia

Thank you for your comment.

The project is contained within the state right-of-way. No additional right-of-way is required.

Public Hearing Transcript

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22 ATKINSON-BAKER, INC.

23 COURT REPORTERS

(800) 288-3376

24 www.depo.com

FILE NO.: A403C3D

25 REPORTED BY: CONNIE SILVA, CSR NO. 11460

1 Thursday, June 10, 2010 Fresno, California

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5 The following proceedings were had at Hidalgo Elementary
6 School, 3550 East Thomas, Fresno, California at 4:51 p.m.,
7 to wit:

8

9 NEIL BRETZ: This is Neil Bretz; I'm the Caltrans
10 project manager for the project and we are here tonight
11 at Hidalgo Elementary School at the open house, slash,
12 public hearing meeting for the 180 Braided Ramp Project
13 here in the city of Fresno. The project will construct
14 a braided ramp system on State Route 180, between State
15 Route 41 and 168 here in Fresno. The main purpose of
16 tonight's meeting is to introduce the project to the
17 general public and ask for any questions or comments
18 that the public may have regarding our project and also
19 our environmental process.

20 So it's about seven minutes to 5:00 and all
21 of our Caltrans staff is here. We're able to answer any
22 questions and to take comments from the public and we're
23 ready to begin.

24

25

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COMMENTS FROM THE PUBLIC

STANLEY McALLISTER: Just wanted to insure that they looked at putting the sound wall in between because we were told they're putting one between Millbrook and First and we definitely would like one between Millbrook and Cedar. My address is 4106 East Harvey, Fresno, 93702.

JUDITH C. PALMER: I'm his neighbor. Same comment as above.

MARIA MAYA: Let them know my concern was the -- the rats, maybe mice, I was concerned. She told me that they have these little candle things, that I could call her when I move the cans, due to the field that we have out there by the bridge, and it's an open field, so I told her I have never had that before, so I was concerned about that. She said they have something for that, so I'm going give her a call, see if they can get something out there for us. That was it. I was hoping they didn't buy me out or anything. I have been there too long. That was my concern just mostly, I guess, the bridge going over, merging the freeway, that bridge. My address is 705 North Sixth Avenue. I was concerned about the dust, my allergies. That's my other concern, the dust, the noise, mice outside, maybe bugs, who knows, I don't know. That was about it. Anything else, just allergies, the

1 air, mice outside, a lot of little gophers in my yard --
2 backyard, a lot of those.

3 You think if I call they would give us something?
4 That's what I was concerned too. We planted grass and we
5 found a lot of little gopher holes, so we have a little
6 bit of that. No, he didn't. He took my picture. I guess
7 that's it. That's it.

8 --- END OF COMMENTS FROM PUBLIC ---

9 -o0o-

10 NEIL BRETZ: We're basically done. We wrapped up
11 the open house. We had a fairly decent turn out, no real
12 negative comments. Overall it was pretty favorable, the
13 overall project. Everybody seemed to understand why we
14 were doing it and were appreciative of the fact that
15 we are trying to solve the problem out there. So we'll
16 just continue on now and address the comments we received
17 now back to the public and move forward with the project.
18 That's about it.

19 -o0o-

20 (The proceedings were concluded at 7:36 p.m.)

21 -o0o-

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1 I, CONNIE SILVA, Certified Reporter, do hereby certify the
2 foregoing transcript as true and correct.

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4 Dated: 06/17/2010 _____
CONNIE SILVA, CSR

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Response to Comments from the Public Hearing Transcript

Response to comments #1 and #2, from Stanley McAllister and Judith Palmer:

From the comments received before and during the public comment period, Caltrans identified the need to take new noise readings along East Harvey Avenue between Eighth Street and Cedar Avenue (south of State Route 180). The new readings showed that two soundwalls were warranted at this location. On July 2, 2010, a notice was sent to property owners on East Harvey Avenue between Eighth Street and Cedar Avenue notifying them that additional soundwalls will be added to the project. Two overlapping soundwalls will be constructed, one on the edge of shoulder and the other 15 feet from the state right-of-way. The soundwall on the shoulder will be 12 feet high and 831 feet long and will extend from Eighth Street to Ninth Street (see Figure 2-11). The soundwall located 15 feet from the state right-of-way will be 10 feet high and 1,254 feet long. For further information, please refer to the noise section of this document.

Response to comments #3 and #6, from Maria Maya: Thank you for your comments. Caltrans does not typically address residential rodent issues and was unable to identify the person you spoke with as a Caltrans employee. However, Caltrans is pleased you found someone at the public hearing who spoke with you about these problems.

Response to comment #4, from Maria Maya: The project is contained within the state right-of-way. No additional right-of-way is required.

Response to comment #5, from Maria Maya: The project would be subject to a Dust Control Permit from the San Joaquin Unified Air Pollution Control District. Caltrans Standard Specifications pertaining to dust control and dust palliative requirement are a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The project will build four soundwalls, which will lower noise levels in the surrounding neighborhoods.

List of Technical Studies that are Bound Separately

Air Quality Report
Noise Study Report
Supplement to the Noise Study Report
Water Quality Report
Visual Impact Assessment
Historic Property Survey Report with attached Archeological Survey Report Memo
Paleontological Identification Report
Biological Compliance Memo to File
Hazardous Waste Memo to File
Hydraulics Recommendation
Floodplain Memo to File
Operational Analysis Report
Safety Analysis Update